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ACCUPLACER Reading

CAREER AND WORKFORCE TRAINING READINESS SKILLS INSIGHT™

Skill/Knowledge Statements are based on an analysis of the performance of thousands of test takers and don't necessarily describe the knowledge, skills, and abilities of *individual* test takers. They are also cumulative, which means test takers scoring in a particular band are likely to know and be able to do what's described in that score band as well as in lower score bands. Examples of associated career and workforce readiness skills were developed in consultation with faculty teaching in community and technical colleges.

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 200–220	
Students scoring in this band are beginning to demonstrate foundational skills and knowledge needed to be college ready.	*Students scoring in this band are beginning to demonstrate foundational skills and knowledge needed for readiness in career and workforce settings.*
Score band 221–230	
Students scoring in this band can typically demonstrate the following skills and knowledge in moderately challenging (grades 9–10) texts:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Locate clearly stated information and draw simple reasonable text-based inferences	▪ Read and comprehend straightforward instructions and basic operating procedures ▪ Comprehend routine customer inquiries, locate relevant troubleshooting information in manuals or databases to address such inquiries, and provide appropriate responses or solutions ▪ Locate key details in patient charts, medical records, manufacturing logs, or quality assurance reports
▪ Determine the meaning of a common word or phrase using clear context clues	▪ Use conversational context to determine the meaning of common colloquial expressions or slang words encountered in text-based customer service interactions ▪ Use context to comprehend common medical terminology or frequently used business acronyms
Score band 231–240	
Students scoring in this band can typically demonstrate the following additional skills and knowledge in moderately challenging (grades 9–10) texts:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Locate the explicitly stated main purpose or determine the subtly stated main purpose of a paragraph	▪ Locate the clearly stated main purpose of policies described in an employee handbook and demonstrate understanding of the circumstances to which these policies are applicable ▪ Grasp the main purpose of a customer inquiry ▪ Recognize the main purpose of key portions of a set of medical instructions, a manufacturing process manual, or a software requirements document

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Describe a relationship (e.g., causal, comparative, sequential) based on minor or subtly stated information or reasonably infer a simple implied relationship	▪ Read and comprehend safety incident reports describing factors leading to on-site accidents ▪ Determine sequential or comparative relationships among key metrics in financial reports (e.g., a metric that rises and falls over time) ▪ Identify factors affecting the quality of manufactured products based on quality control reports ▪ Draw on supply chain documentation to trace the movement of goods and services along the chain
▪ Determine the function of a part of a paragraph (e.g., a sentence) in relation to the whole paragraph when that function is simple	▪ Identify and understand the intent behind supporting examples in customer inquiries or complaints ▪ Determine the simple function of a sentence in a paragraph describing a medical procedure, quality control process, or construction method
Score band 241–250	
Students scoring in this band can typically demonstrate the following additional skills and knowledge in moderately challenging (grades 9–10) and complex (grade 11–undergraduate entry level) texts:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Locate clearly stated information and draw simple reasonable text-based inferences	▪ Understand written care instructions provided to a medical patient ▪ Identify system requirements in technical documentation and use them to reasonably infer potential hardware or software compatibility issues ▪ Locate and comprehend building code provisions and zoning regulations presented in construction guidelines and reasonably infer potential design constraints
▪ Determine the meaning in context of a common high-utility academic word or phrase (a word or phrase that appears with relative frequency in texts across content areas and is more common in writing than in speech)	▪ Understand the meaning in context of words and phrases that appear commonly in workplace and professional documents such as health and safety guidance, financial reports, medical texts, IT bulletins, or manufacturing manuals
▪ Reasonably infer the main purpose of a paragraph or text	▪ Determine the main purpose an extended explanation serves in a project plan ▪ Determine the main purpose of a new advertising campaign as described in a staff memo ▪ Determine the core rationale behind a written proposal for a software system design change
▪ Determine the point of view or perspective from which a text is related when that point of view or perspective is clearly established	▪ Recognize bias in a press release ▪ Identify or reasonably infer a customer's perspective when evaluating user feedback ▪ Examine the main point of view represented in a policy document
▪ Make connections between information and ideas from multiple texts on the same topic or similar topics	▪ Recognize clear areas of agreement and disagreement across various witness statements describing the same incident ▪ Analyze multiple instances of customer feedback to identify underlying patterns or trends ▪ Integrate information and ideas on a particular IT issue presented in various security bulletins and online developer forums

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 251–260	
Students scoring in this band can typically demonstrate the following additional skills and knowledge in moderately challenging (grades 9–10) and complex (grade 11–undergraduate entry level) texts:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Locate and interpret subtly stated information and draw reasonable text-based inferences	▪ Reasonably infer the submission requirements and evaluation criteria found in a call for grant proposals ▪ Analyze a report of medical research findings to identify underlying health implications or treatment considerations ▪ Assess architecture design evaluations to reasonably infer overarching strengths or areas for improvement
▪ Determine the meaning in context of a relatively common high-utility academic word or phrase (a word or phrase that appears with relative frequency in texts across content areas and is more common in writing than in speech)	▪ Understand the meaning in context of words and phrases that appear somewhat commonly in workplace and professional documents such as health and safety guidance, financial reports, medical texts, IT bulletins, or manufacturing manuals
▪ Determine the function of a part of a text (e.g., one or more sentences) in relation to the whole text when that function is straightforward	▪ Identify the purpose of a particular section or paragraph in manufacturing process documents, security protocols, or licensing or certification requirements ▪ Understand the function of specific sections or diagrams in transportation safety manuals
▪ Reasonably infer a central idea or theme	▪ Determine the main point of particular modules in a security awareness training program ▪ Reasonably infer the thesis or central claim of health care policy briefs
▪ Make somewhat complex connections between information and ideas from multiple texts on the same topic or similar topics	▪ Find commonalities between industry best practices and the practices of a particular organization as outlined in various sources
▪ Describe the main effect that word choice has on meaning or tone	▪ Assess the effect on meaning or tone of using a particular word or phrase in advertising copy, training modules, or responses to customer or supervisor inquiries or complaints ▪ Evaluate whether the language used in patient education materials or other medical literature conveys or fails to convey the severity, urgency, or potential risks associated with a particular condition or treatment ▪ Determine whether descriptive language used in architecture design proposals or project pitches adequately evokes a particular aesthetic

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 261–270	
Students scoring in this band can typically demonstrate the following additional skills and knowledge in moderately challenging (grades 9–10) and complex (grade 11–undergraduate entry level) texts:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Determine the function of a part of a text (e.g., one or more sentences) in relation to the whole text when that function is complex	▪ Evaluate the role and significance of specific sections within opinion pieces, reports on clinical studies, or research papers ▪ Determine the purpose of specific manufacturing process steps in the context of a production workflow
▪ Determine the main purpose of a text when that purpose is complex	▪ Draw on product roadmaps to discern the core aims underlying a new IT system or software platform ▪ Discern the fundamental principles guiding an organization's manufacturing or operational excellence programs by examining standard operating procedures
▪ Make moderately complex to subtle or complex connections between information and ideas from multiple texts on the same topic or similar topics	▪ Develop an understanding of how particular security breaches or health and safety incidents occurred based on a review of several after-incident reports and witness statements ▪ Analyze multiple technical specifications documents and quality control reports to identify potential areas for manufacturing process improvements
Score band 271–300	
Students scoring in this band can typically demonstrate the following additional skills and knowledge in complex (grade 11–undergraduate entry level) and highly complex (lower-division undergraduate) texts:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Draw a subtle or complex conclusion or reasonable text-based inference	▪ Analyze legal contracts, identify the purpose and determine the implications of specific clauses, and assess their likely impact on the overall agreement ▪ Comprehend sophisticated industrial engineering concepts or manufacturing philosophies from scholarly sources or industry white papers
▪ Determine the meaning in context of a relatively uncommon high-utility academic word or phrase (a word or phrase that appears with relative frequency in texts across content areas and is more common in writing than in speech)	▪ Use context to reasonably infer the meaning of an uncommon industry-specific word or phrase in an expert-witness statement ▪ Use context to comprehend the meaning of specialized medical or pharmaceutical terminology or relatively uncommon logistics technology terms
▪ Make moderately complex to subtle or complex connections between information and ideas from multiple texts on the same topic or similar topics	▪ Integrate various threat intelligence reports and network architecture documents to develop a data security strategy ▪ Reconcile environmental impact assessments to ensure a construction project meets regulatory and sustainability requirements ▪ Identify a potential business opportunity after reviewing sources outlining recent consumer behaviors, market trends, and economic forecasts

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ACCUPLACER Writing

CAREER AND WORKFORCE TRAINING READINESS SKILLS INSIGHT™

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 200–220	
Students scoring in this band are beginning to demonstrate foundational skills and knowledge needed to be college ready.	*Students scoring in this band are beginning to demonstrate foundational skills and knowledge needed for readiness in career and workforce settings.*
Score band 221–230	
Students scoring in this band can typically demonstrate the following skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following skills and knowledge in career and workforce settings:*
▪ Improve a text's use of language by using familiar words and phrases precisely	▪ Use familiar words and phrases precisely in documents such as cover letters and interview follow-up letters or emails, patient treatment plans, or quality assurance protocols
▪ Recognize and correct a simple error in sentence structure or punctuation (e.g., an inappropriate shift in verb tense)	▪ Correct simple errors in sentence structure, usage, or punctuation in documents such as incident reports, patient records, architecture project proposals, or transportation manuals
Score band 231–240	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Improve the development and organization of a text by deleting a clearly irrelevant sentence and by using a word (e.g., "however") to establish a basic logical transition between sentences	▪ Make edits to remove extraneous details from employee evaluations, software user guides, project proposals, or standard operating procedures ▪ Employ basic logical transitions to connect information and ideas when describing medical treatments or health care protocols, outlining software capabilities or system architectures, or documenting distribution center functions
▪ Improve a text's use of language by using relatively common words and phrases precisely and by combining sentences to achieve a simple effect (e.g., using a prepositional phrase to reinforce a straightforward relationship between information and ideas in the original sentences)	▪ Use relatively common words and phrases precisely in documents such as cover letters and interview follow-up letters or emails, patient treatment plans, quality assurance protocols, or police reports ▪ Combine sentences to clarify relationships between medical concepts, manufacturing tasks, construction activities, legal principles, or shipping timelines

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Recognize and correct a basic error in sentence structure, usage, or punctuation (e.g., delete an unnecessary comma that has a disruptive effect in a sentence; include a necessary comma before a coordinating conjunction in a compound sentence)	▪ Correct basic errors in sentence structure, usage, or punctuation in documents such as incident reports, patient records, architecture project proposals, or transportation manuals
Score band 241–250	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Improve the development and organization of a text by adding relevant supporting information to a sentence; by using a word or phrase (e.g., "in turn") to establish a logical transition between sentences; by using a sentence to effectively introduce a paragraph; and by determining the most logical placement for a sentence in a text	▪ Include relevant information to support proposed manufacturing process changes ▪ Employ logical transitions to connect information and ideas in descriptions of medical treatments or health care protocols ▪ Craft an introductory sentence that highlights the main topic or purpose of a paragraph in a policy bulletin ▪ Determine the best placement for a sentence in software documentation to provide context or serve as a transition between related concepts
▪ Improve a text's use of language by combining sentences to achieve a basic effect (e.g., using a subordinating conjunction to reinforce a relationship between information and ideas in the original sentences)	▪ Combine sentences to clarify the rationale behind treatment recommendations, compare system capabilities, or emphasize relationships between shipping and delivery timelines
▪ Recognize and correct an error in sentence structure, usage, or punctuation (e.g., clarify a vague pronoun)	▪ Correct errors in sentence structure, usage, or punctuation in documents such as incident reports, patient records, architecture project proposals, or transportation manuals
Score band 251–260	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Improve the development and organization of a text by determining the best information to add to clarify or deepen a text's discussion and by using a transition sentence to logically link information and ideas in a text	▪ Enhance software documentation by adding implementation details or troubleshooting guidance ▪ Use transition sentences to connect information about symptoms, treatments, and preventive measures in a health care context or to link steps involving materials preparation or assembly in a manufacturing context
▪ Improve a text's use of language by combining sentences to achieve an effect (e.g., using a modifying phrase to reinforce a relationship between information and ideas in the original sentences)	▪ Combine sentences to emphasize connections between medical therapies and their intended effects, between legal concepts and their societal implications or enforcement mechanisms, or between standard operating procedures and their real-world applications
▪ Recognize and correct a somewhat subtle or complex error in sentence structure, usage, or punctuation (e.g., eliminate a rhetorically unacceptable comma splice; choose properly between and among frequently confused words, such as "there" and "their"; correct a disagreement in number when a singular verb follows a plural subject)	▪ Correct somewhat subtle or complex errors in sentence structure, usage, or punctuation in documents such as incident reports, patient records, architecture project proposals, or transportation manuals

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 261–270	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Improve the development of a text by determining the best evidence to add to support a claim and by adding or excluding information and ideas on the basis of a text's focus	▪ Reinforce claims made in manufacturing process documentation by adding relevant quality control data ▪ Add relevant support to architecture proposals by including case studies showcasing successful implementation of similar designs ▪ Refine software documentation by incorporating or leaving out details based on an understanding of the target audience's likely level of technical expertise
▪ Improve a text's use of language by eliminating easily overlooked redundancies and wordiness that affect clarity	▪ Eliminate redundancies that impede clarity in documents such as patient education materials, software manuals, technical product descriptions, or architecture narratives
▪ Recognize and correct a subtle or complex error in sentence structure, usage, or punctuation (e.g., apply an understanding of nonrestrictive sentence elements by adding necessary punctuation to set off a nonrestrictive clause)	▪ Correct subtle or complex errors in sentence structure, usage, or punctuation in documents such as incident reports, patient records, architecture project proposals, or transportation manuals
Score band 271–300	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Improve the organization of a text by determining the best placement for a sentence in a text among several plausible options	▪ Refine manufacturing process documentation by reordering steps to align with particular workflow principles ▪ Revise directions to operators, technicians, and assembly line workers to ensure that complex steps are presented in the most logical order
▪ Improve a text's use of language by combining sentences to achieve a complex effect (e.g., rearranging sentence elements and adding language to clarify challenging relationships between information and ideas in the original sentences)	▪ Combine sentences to clarify complex relationships between medical symptoms and conditions, clarify dependencies between system components, or capture the interplay between legal statutes and judicial interpretations

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ACCUPLACER Arithmetic

CAREER AND WORKFORCE TRAINING READINESS SKILLS INSIGHT™

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 200–220	
Students scoring in this band may demonstrate the following skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following skills and knowledge in career and workforce settings:*
▪ Add and subtract integers	▪ Compare actual cash inflows with actual cash outflows ▪ Calculate inventory of an item given how many were used and how many were ordered ▪ Based on the required depth of a building foundation and actual ground level, determine the depth to dig ▪ Calculate patient intake and output
▪ Add simple decimal values	▪ Make change from a cash register ▪ Balance a checkbook ▪ Calculate total fluid intake of a patient throughout a day ▪ Determine the total gigabytes to be transferred given the size of individual files ▪ Add prices of items
▪ Identify decimal values that occur between integers	▪ Given an amount of cash available in whole bills, determine if there is enough cash necessary to purchase an item when the cost is expressed as a decimal ▪ Properly count coins and convert them to bills and coins at a cash register ▪ Identify how much of a building material could have been used if the amount was between two integer values

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 221–230	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Multiply and divide integers	▪ Given a regular monthly payment, determine the approximate annual cost and vice versa ▪ Determine the amount of medication needed for a patient given the patient's weight and dosage requirement ▪ Determine the time needed for a company to produce an order given the size of the order and the daily production capacity ▪ Determine the profit or loss of a product ▪ Calculate the moment on a structure due to a force load
▪ Add and subtract decimal values to the thousandths place	▪ Calculate the profit or loss of a work project given the total income and various costs ▪ Given a blood test or urinalysis, determine whether the sample is within the normal range and if not, how far above or below the normal range ▪ Find the total amount of lumber in linear feet for a construction project ▪ Measure and calculate quantities of items needed for a project ▪ Calculate total surface area, given individual surface areas, to help determine the amount of materials needed for a project
▪ Apply order of operations with integers using addition, subtraction, multiplication, and parentheses	▪ Given an inventory amount, calculate the remaining supply after the completion of multiple projects ▪ Given multiple distances required for a delivery and their corresponding driving times, determine how long it will take for an item to be delivered ▪ In packaging or tailoring, given a formula and dimensions, determine how much material is needed to cover an object given the number of surfaces and their areas ▪ Create a profit/income statement for appraised commercial properties

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 231–240	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Order integer values from least to greatest	▪ Given a set of temperatures in degrees, rank them from coldest to warmest ▪ Given a temperature reading, determine if it is within the target temperature range for operation ▪ Determine which company had the greatest revenue ▪ Determine which worker was able to complete a task in the least amount of time ▪ Determine when vital signs are above or below normal conditions ▪ Select the lightest beam to use in design for a given load
▪ Use addition, subtraction, and multiplication of whole numbers and decimals to solve one-step applied problems	▪ Measure the mass of a liquid sample by the difference between the total mass and the mass of the container ▪ Given the mass or weight of a product, calculate the total mass of multiple products of the same type ▪ Find the increase or decrease in sales over the course of a year ▪ Given the number of units and unit cost, find the total cost of a material used in a construction project ▪ Determine net pay after deductions ▪ Track inventory of parts and supplies ▪ Calculate the pressure in a hydraulic system
▪ Multiply decimal values	▪ For medicine that requires a dosage of multiple tablets, calculate the total dose amount given the mass per tablet and number of tablets ▪ Find the total dosage for a patient over 24 hours given the individual dosage and the number of times the medication is given ▪ Determine the volume of a concrete slab given its length, width, and depth ▪ Calculate simple interest and loan payments as a loan officer
▪ Round values to the nearest tenth	▪ Weigh a sample on a digital balance with a display to 0.001 grams and report the mass to the nearest tenth of a gram ▪ Determine area to the nearest tenth of a square foot or meter ▪ Round dosage conversions to give a proper dose of medicine to a patient

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 241–250	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Find the percent of a given number or what percent a given value is of another given value	▪ In chemical manufacturing, given a theoretical yield and an actual yield, calculate the percentage yield of a manufacturing process ▪ Given a stock's value on two different dates, calculate the percentage change in the value of the stock ▪ Calculate sales tax to charge a client ▪ Determine what percentage of a patient's medication has been given when provided the amount already given and the total prescribed ▪ Calculate the amount of interest owed on a loan ▪ In health sciences, calculate the percent uptake of recommended health screenings given total number of patients and total number screened
▪ Convert fractions to decimal values	▪ Report a measurement of a fraction of a unit in decimal form ▪ Convert fractions to decimals in order to fulfill appropriate dosage amounts ▪ Select the correct tool or pipe sizes ▪ Calculate and/or adjust machine loads to perform construction work
▪ Identify equivalent fractions	▪ In biomedical science, given the ratio of solute mass to solution volume, calculate the mass of solute needed for a given volume of solution ▪ Determine if dimensions in a garden design have the same proportion as a scale drawing ▪ In construction, convert from one denominator to another in order to scale up or down from a blueprint, e.g., 6/16 = 3/8 ▪ Convert recipe values to match kitchen measurement tools available
▪ Add basic mixed numbers with denominators of the same factor	▪ In construction, add together lengths of mixed numbers of inches by putting all fractional values into equivalent eighths or sixteenths of an inch ▪ Determine the total amount of lumber needed given multiple individual amounts ▪ Determine the total amount of medication needed given multiple individual amounts ▪ Double or triple a recipe

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 251–260	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Perform operations with percents	▪ If a mixture has a known percentage of a substance, then given the amount of that substance in a sample of the mixture, determine the total amount of the mixture ▪ Given a down payment on a vehicle is a percentage of the total value of the car, determine the value of the vehicle ▪ Use personal income two-tier tax tables to calculate an overall tax rate ▪ Calculate the price after sales tax given the original price ▪ In payroll, calculate Social Security tax on a salary ▪ Determine what percentage of a patient's medication has been given based on the amount already given and the total prescribed ▪ Scale dimensions for a drawing or solid model ▪ Scale a recipe to serve a specified number of people ▪ Given appropriate data, determine engagement rates as a social media influencer
▪ Use addition, subtraction, and multiplication of whole numbers, fractions, and decimal values to solve multistep applied problems	▪ Use decimal and percent amounts to scale a solution of a given concentration ▪ Analyze decimal numbers on a pay stub to determine the fraction of pay going to each category and to verify the accuracy of year-to-date numbers ▪ Determine the total cost of a construction project given the cost and number of individual items ▪ Determine the total dosage a patient will take in a week given the dosage per day ▪ Determine number of bags needed to fertilize a yard, gallons of paint needed to paint a room, or boxes of flooring to lay a new floor ▪ Cash out a cash register ▪ Determine the weight of an object by calculating its volume given the specific weight of the material ▪ Measure displacement of an engine
▪ Convert improper fractions to mixed numbers	▪ Given multiple lengths expressed as fractions of an inch with a common denominator, determine the total length of all pieces as a mixed number ▪ Determine the amount of medication a patient receives at intervals during the day given the amount the patient must receive in 24 hours ▪ Determine the number of bags of cement needed per day if a job requires a given number of bags and the job will take a certain number of days to complete ▪ Know the correct amount of an item to purchase after computation is completed

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 261–270	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Convert a fraction to a percent	▪ Given a volume of a solute in a total volume of solution, calculate the percent by volume concentration of the solution ▪ Determine the percentage of trucks going to a certain area ▪ Determine the percentage of materials going to a certain manufacturing run ▪ Calculate the percentage of the mass of an ingredient as part of the total mass of a food item ▪ Calculate percent of crops that were harvested or lost
▪ Solve one-step applied problems involving percents	▪ Calculate the final percent by volume concentration when a dilution occurs ▪ Determine the best discount for clients ▪ Determine the price to charge given the cost and the percent markup ▪ Calculate lawyer fees from settlements
▪ Use percents greater than 100%	▪ Determine the number of bacteria after an initial sample has grown by a percentage that exceeds 100% ▪ Determine percent of sales goal reached given goal and actual sales amount that exceeds the goal ▪ Calculate the total price including sales tax
▪ Divide values by a fraction or decimal between 0 and 1	▪ Given a fractional length for a single unit, calculate how many units make up a total composite length ▪ Determine how many pieces a piece of lumber can be cut into if it is cut into pieces between 0 and 1 unit long ▪ Given total dosage, determine how many doses of medication a patient will receive if they must take a fractional pill dosage

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 271–300	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Apply the order of operations to solve numerical expressions involving fractions, including mixed numbers and improper fractions	▪ Use the order of operations to correctly scale materials in a standard operating procedure, convert metric units by thousandths, and/or remove a control value from a sample reading ▪ Given supply costs and fractional amount needed per product, calculate the materials' cost per product or per batch of products ▪ Compute effective gear ratio based on tire size ▪ Take inventory in a warehouse
▪ Solve multistep applied problems involving percent	▪ Based on percent yields of a multistep manufacturing process, calculate the overall yield and percent yield ▪ Given the price of an item increases by a percent, determine the increase to the price charged to customers in order to keep the same profit margin or calculate the price required to assure a percent profit ▪ Determine how much to dilute a medicine in solution form to give a lower dosage as prescribed ▪ Assess risk by calculating future losses or gains ▪ Price clothing based on the cost of the material used with the percent markup
▪ Compare, order, and estimate values of combinations of integers, fractions (including mixed numbers and improper fractions), decimals, and percents	▪ Calculate improper fractional quantities needed to create multiple products that require a fractional amount each ▪ Order the dosages from weakest to strongest ▪ Given a mixed number, estimate the amount of building material needed and determine how much to order ▪ Make accurate cost estimations for construction projects, purchases, and expenses

ACCUPLACER®

ACCUPLACER Quantitative Reasoning, Algebra, and Statistics

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Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 200–220	
Students scoring in this band may demonstrate the following skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following skills and knowledge in career and workforce settings:*
▪ Add, subtract, and multiply integers	▪ Determine if there is sufficient stock available to perform multiple assays ▪ Take an inventory of stock solutions and calculate the inventory of an item given how many were used and how many were ordered ▪ Determine the depth to dig based on the required depth of a building foundation and actual ground level in relation to the building ▪ Calculate power, resistance, current, and electrical loads ▪ Calculate medical bills after insurance is paid ▪ Calculate revolutions per minute (rpm), torque, and horsepower of a motor or a set of gears
▪ Calculate and compare mean and median	▪ Use a density plot (or dot plot) to evaluate whether or not a dataset is skewed or centered about the mean as a part of a quality control analysis ▪ Determine the mean or median length of hospital stay ▪ Determine average number of labor hours for multiple jobs for a construction company ▪ Compute average sale price of properties to anticipate home costs

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Write and solve one-step equations and inequalities	▪ Use the dilution formula to calculate the volume of stock solution needed to perform a dilution ▪ Use a scale drawing of a garden design to determine garden dimensions, including unit conversions ▪ Determine how many workers will be needed given the total cost of a construction job, cost of materials, and hourly cost for labor ▪ Given the down payment, total cost for a job, and the monthly payments, determine how long it will take for a customer to complete payment ▪ Compute torque or horsepower of an engine ▪ Use basic construction and trade formulas
▪ Rewrite expressions with exponents	▪ Express bacterial growth using exponents ▪ Express units of measure with exponents ▪ Convert numbers into scientific notation ▪ Evaluate computing power of a computer
Score band 221–230	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Identify coordinate points in the *xy*-plane	▪ Reliably associate a data point with a location within an *xy*-graph ▪ Identify intersection of supply and demand curves ▪ Given the graph of costs, identify the fixed costs (*y*-intercept) ▪ Read maps or geographical charts ▪ Locate position and orientation in a computer animation ▪ Create basic coordinate points for inputting G-code for Computer Numerical Control (CNC) machine parts
▪ For a linear equation in two variables, given one value, calculate or find the other value	▪ Given a verbal description of a linear relationship between samples assayed and reagent consumed, determine the amount of reagent consumed for a certain number of samples assayed ▪ Given the down payment, total cost for a job, and the monthly payments, determine how long it will take for a customer to complete payment ▪ If a company needs a given number of workers and has various numbers of workers on given shifts, determine how many more workers need to be hired or downsized ▪ Calculate appropriate pipe size using Hazen-Williams equation
▪ Evaluate a rational expression with integers in the numerator and denominator	▪ Given a bacterial sample that grows by a multiple every hour, determine by what factor it will grow in a given amount of time, assuming the same rate of growth ▪ Given integer values for product and reactant concentrations, determine a reaction quotient ▪ Given the time it would take for two workers to complete a job, determine how long it will take them to complete it together ▪ Determine the average delivery time with traffic: $T = B + B\frac{F-1}{k}$, where B = base travel time, F = traffic factor ($F \geq 1$), and k = a constant representing the sensitivity to traffic ▪ Determine the sensitivity, specificity, and precision of diagnostic testing ▪ Calculate financial formulas

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Calculate and interpret probability within a context	▪ Given a percentage of people with a particular symptom, describe the likelihood that a certain number of patients have had that symptom as likely, unlikely, or impossible ▪ Given the testing results of blood types as an integer number, determine the percentage of the sample with a particular type of blood ▪ Conduct a simple survey and summarize the results in terms of probabilities of responses ▪ Given an error rate as a percentage, determine the number of defects ▪ Calculate insurance risk of an event happening ▪ Given outcomes for a group of patients undergoing a medical treatment, determine the percentage success rate
Score band 231–240	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Solve one-step problems involving unit rate, ratio, proportion, and unit conversion	▪ Given a protein assay requirement, determine how many assays can be run ▪ Convert units of a particular dosage ▪ Identify the numeric ratio equivalent of mL reagent to assay ▪ Given the number of bags of cement needed for multiple jobs and the number of bags in a case, determine how many cases the company needs to order ▪ Calculate the cost per item when designing clothes for manufacturing ▪ Calculate prescription dosages
▪ From a verbal description, identify a linear mathematical expression or equation	▪ Identify the numerical relationship in a standard curve given a verbal description ▪ Write a linear expression that relates supply needed to number of products made or total income to number of products sold ▪ Given the cost of materials and the hourly wage of a worker, write an expression for the total cost based on the number of workers needed for the job ▪ Given the volume of an IV bag and the flow rate, write an equation for how much is left in the IV bag at a particular time ▪ Create linear equations to show profit or loss when manufacturing and selling items
▪ Identify equivalent expressions in one variable	▪ Compare bids to determine best or equivalent offers

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 241–250	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Simplify expressions involving positive exponents	▪ Numerically combine terms given an equilibrium expression showing a shift in equilibrium, or solve for a reaction quotient given a value for the shift in equilibrium concentration ▪ Given revenue and cost equations, determine a profit equation ▪ Given an expression that represents the concentration of a drug in the bloodstream, determine how much of the drug remains after a certain amount of time ▪ Apply common mechanical engineering formulas and simplify the result
▪ Apply rates, ratios, and unit conversions in multistep problems	▪ Use the dilution formula to calculate the volume of stock solution needed to perform a dilution ▪ Determine how much more cement will be needed in a small construction job ▪ Given a production run rate, determine how much of a particular product is needed to produce a given number of items ▪ Calculate the correct rate for an IV drip ▪ Scale drawings and blueprints ▪ Calculate the volume of fluid that flows through a conduit per hour
▪ Rewrite numbers greater than 10 with a base of 10	▪ Express bacterial cell counts with a base of 10 ▪ Express number of molecules with a base of 10 ▪ Move fluently in the metric system as it relates to auto mechanics, nursing, and pharmacy ▪ Interpret Richter scale measurements
Score band 251–260	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Solve a system of linear equations in two variables	▪ Test if a chemical equation is balanced ▪ Based on two equations for income per item sold and cost per item sold, calculate the number of items that must be sold to make a profit ▪ Given linear supply and demand equations, determine the equilibrium point ▪ Compute return of investment (profit margin) when manufacturing items to sell ▪ Analyze multiple factors on insurance costs ▪ Determine the necessary force vector to null out a system

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Calculate the slope and *y*-intercept of a line	▪ Given two data points, determine the initial rate of an enzyme catalysis reaction or the standard curve of a Bradford protein assay ▪ Given a fixed service fee and the unit cost of an item, create an equation to represent the cost of purchasing *x* items ▪ Calculate pipe slope for proper drainage ▪ In engineering, design a structural model (e.g., set of stairs) given a starting point and a constant rate of change
▪ Solve problems with fractions and positive and negative integers	▪ Confirm that the charge is balanced for an ionic compound or in an ionic chemical equation ▪ Add and multiply dimensions expressed in fractions of inches ▪ Determine axle loads ▪ Decode basic coded and encrypted messages ▪ Compute electrical formulas
Score band 261–270	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Solve multistep problems with integers presented in a variety of ways	▪ Use a table or verbal description to evaluate a proportional relationship, for example, moles or grams of solute given volume of solution and molarity or percent m/v ▪ Follow step-by-step procedures to code computer algorithms that work efficiently ▪ Calculate rate of incline or descent of an airplane ▪ Calculate drug doses that vary based on changing variables
▪ Calculate the slope and *y*-intercept of a line perpendicular or parallel to a given line	▪ Interpret trends based on a plot of personal health data ▪ Arrange a detector for fluorescence spectroscopy perpendicular to the light source ▪ Given a linear cost equation involving unit cost and fixed cost, determine how the line of that cost equation is related to a new equation if the fixed costs increase ▪ Design landscapes with proper spacing
▪ Calculate probability within a context	▪ Determine probabilities of population results for health screenings ▪ Determine the probability of outcomes for sample testing ▪ Determine the probability of the production of a defective item ▪ Calculate the risk of particular events for insurance purposes
▪ Make connections between tables, graphs, verbal descriptions, and algebraic equations representing a linear relationship	▪ Identify correspondence of sales data in table, algebraic, and graphic presentations ▪ Determine which could be the graph of the cost of an order with a given fixed and variable cost ▪ Analyze the current weather to predict the state of the atmosphere in the future ▪ Analyze data from various sources to solve design and engineering problems

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 271–300	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Create expressions to represent complex perimeter and area problems	▪ Use geometric formulas to calculate wall and floor areas for finishes and perimeters for trim-length requirements ▪ Use geometric formulas to calculate space requirements in stockroom shelving and counter space requirements given equipment dimensions ▪ Use the Pythagorean theorem to confirm that corners in construction are a right angle ▪ If the length and width of a concrete slab are increased, determine how this will affect the volume of the slab ▪ Determine the square footage of an irregular shape from an architectural drawing ▪ Determine the optimal arrangement of boundaries to build pens and plant crops with materials present ▪ Calculate air or water flow rate
▪ Evaluate numerical expressions involving absolute value	▪ Evaluate and express manufacturing specifications using absolute value ▪ Use absolute value to express the bounds of a data set ▪ Model market fluctuations as a financial analyst ▪ Assess and mange risks as a loan officer ▪ In geophysics, use absolute value to evaluate the total amount of energy being used
▪ Make connections between linear and nonlinear equations and inequalities and their graphs	▪ For transportation, graph or calculate using inequality functions the range of time it will take to travel *x* miles if travel is within a given range ▪ Make decisions about land usage for urban planning ▪ Observe trends in medical lab results

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CAREER AND WORKFORCE TRAINING READINESS SKILLS INSIGHT™

Skill/Knowledge Statements are based on an analysis of the performance of thousands of test takers and don't necessarily describe the knowledge, skills, and abilities of *individual* test takers. They are also cumulative, which means test takers scoring in a particular band are likely to know and be able to do what's described in that score band as well as in lower score bands. Examples of associated career and workforce readiness skills were developed in consultation with faculty teaching in community and technical colleges.

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 200–220	
Students scoring in this band may demonstrate the following skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following skills and knowledge in career and workforce settings:*
▪ Create a linear equation given a table of values	▪ Identify a linear equation that represents results of a standard curve given in a data table ▪ Identify a linear equation that represents trends in sales or inventory data in a table ▪ Given a list of how many items were ordered and the total cost for each order, determine the equation describing the relationship between the number of items ordered and the cost ▪ Given a list of the weights of patients and how much medication they received, determine the equation describing the relationship between these variables ▪ Turn linear interpolate data tables into equations to inform decisions used by pilots ▪ Develop formulas used in chemistry calculations ▪ Identify and calculate trends in financial, retail, and scientific situations
▪ Solve problems involving intersecting lines and triangles to calculate angle measures	▪ In construction, evaluate a scale drawing with angles and triangles to determine missing angles ▪ When creating a cross-sectional support beam, the measures of the angles created by the lumber should add to 180 degrees ▪ Calculate the correct angle for takeoff and landing ▪ Determine ideal angles to bend conduit sections along a wiring route

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Solve simple equations in one variable that contain a square root symbol	▪ Solve the body surface area formula with one variable, height or weight ▪ Solve chemical equilibrium expressions using a square root ▪ Apply the rate of IV fluid administration using the formula $r=\frac{d}{\sqrt{t}}$, where d = volume and t = time, in hours ▪ Square a building using a T-square for carpentry work ▪ Calculate amps of a circuit
Score band 221–230	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Rewrite quadratic and simple polynomial expressions by factoring	▪ In designing a store, farm, garden or home layout, use an area model and polynomials to relate the size of individual areas to the total area ▪ Solve formulas used for designing brakes
▪ Create and use a linear equation from a real-world context to solve problems	▪ Perform calculations relating net profits to sales and fixed and per-item costs ▪ Perform calculations relating net productivity to time required for start-up and shutdown and to perform a single analysis or manufacturing process ▪ Determine how many units were produced, given production costs and unit costs ▪ Using variables, develop functional video games ▪ Determine how far a plane can fly on a tank of gas
▪ Apply triangle properties, including perimeter and area formulas, to solve problems	▪ In construction, apply rectangle and triangle properties, including similarity, to solve problems about surface area and side lengths ▪ Calculate factors involved in landing a plane, including rate of descent and length, width, and surface of a runway ▪ Determine optimal arrangement of boundaries when building a pen or planting a field with material present ▪ In mechanical/civil engineering, create uniform distributed loads and force-moment diagrams
▪ Solve problems involving lines using coordinate geometry, including finding the slope of a line parallel to a given line	▪ Solve problems using a standard linear curve and measurements expressed as (x, y) coordinates. For example, determine the protein concentration of a sample from absorbance in a Bradford assay ▪ Given a linear cost equation involving unit cost and fixed cost, determine how the line of that cost equation is related to a new equation if the fixed costs increase ▪ Given two ordered pairs of how many items were ordered and the total cost for each order, determine the total cost for a third number of items ordered ▪ Calculate descent rate, including time and distance to land

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 231–240	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Solve systems of linear equations with integer coefficients	▪ Check if a chemical equation is balanced ▪ Given linear supply and demand equations, determine the equilibrium point ▪ Calculate the effect of multiple factors on insurance costs ▪ Compute return of investment (profit margin) when manufacturing items to sell
▪ Find the value of one variable using the relationship between two variables	▪ Given degrees in Celsius and the conversion formula, find degrees in Fahrenheit ▪ Given the molar mass of a substance, determine the mass needed to make a solution of a specified molarity and volume ▪ Determine whether the concentration is greater or less than a specific concentration if the mass of solute or the volume of solution is changed ▪ Given the weight of a patient and the dosage of medication, determine how much medication a person of a different weight should receive ▪ Analyze crime scene evidence to determine the angle of impact ▪ Use the gas law and a change in one variable to calculate the change in a second variable
▪ Apply area formulas to solve problems about rectangles	▪ In construction, apply area formulas to determine missing variables ▪ Determine best measurements for building frames and walls that meet specs ▪ Calculate the volume of water tanks
Score band 241–250	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Rewrite rational expressions using factoring or simplification	▪ Numerically combine terms given an equilibrium expression showing a shift in equilibrium, or solve for a reaction quotient given a value for the shift in equilibrium concentration ▪ Solve formulas used in mechanical engineering that involve multiple degrees of freedom ▪ Use the formula to calculate brake factor
▪ Square a binomial expression and rewrite the result	▪ Numerically combine terms given an equilibrium expression showing a shift in equilibrium with terms in the numerator only ▪ Calculate the dimensions of a square given a particular area for architectural design

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
▪ Calculate the slope and write a linear equation given a graph or table of values	▪ Calculate the slope and write a linear equation of a standard curve given a table or graph of data. For example, calculate absorbance vs. concentration for a Bradford assay ▪ Use sales data in a table or graph to calculate a slope and write a linear equation ▪ Given a diagram of a roof, determine its slope and/or pitch ▪ Given a list of how many items were ordered and the total cost for each order, determine the relationship between the number of items ordered and the cost ▪ Determine a linear regressions equation from a table of values to appraise property ▪ Analyze slopes to determine steepness to ensure buildings and bridges can withstand forces
Score band 251–260	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Make connections between lines, points, and equations, including where two lines are parallel or perpendicular	▪ Compare the slope and intercept results of a standard curve to the expected results to determine if the resulting slope is greater than, less than, or equal to the expected slope ▪ Interpret trends based on a plot of personal health data ▪ Describe a blueprint in which walls form right angles or are parallel and determine if two given walls are parallel or meet at a right angle ▪ Given a linear cost equation involving unit cost and fixed cost, determine how the line of that cost equation is related to a new equation if the fixed costs increase ▪ Given a linear cost equation, determine cost-effectiveness of programs
▪ Evaluate simple exponential functions in function notation	▪ Evaluate serial dilution concentrations or dilution factors for a bacterial serial dilution using exponential functions ▪ Given a particular function of bacterial growth, determine how far an infection will spread after a given amount of time ▪ Demonstrate how social media posts go viral ▪ Analyze the temperature change of a system in order to design efficient mechanical systems
▪ Determine the sum of two rational expressions with different denominators	▪ Determine the amount of time for a machine to produce two different types of items given the production rate for each item ▪ Determine the sensitivity, specificity, and precision of diagnostic tests
▪ Make connections between graphs and algebraic equations representing quadratic relationships	▪ For quadratic growth curves or BMI curves, identify correspondence between a graph and its quadratic expression ▪ Apply quadratic relationship connections to drug dosage and weight or to the amount of medication disbursed from an IV over time ▪ Combine supply and demand curves to produce an optimal price for a product for maximum net profit

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 261–270	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Use function notation to add, subtract, combine, and evaluate functions	▪ Given the production rate functions for two machines, calculate outputs for both after a certain amount of time ▪ Given a production rate function for one machine, determine the production rate function for another and whether they output the same amount but for different amounts of time ▪ Calculate supply and demand ▪ Develop computer code that has one input/output pair to understand and analyze algorithms to make programs work ▪ Determine the gear train value needed for a specific rpm (output)
▪ Understand domain, range, maximum, and minimum as they apply to functions and their graphical representations in the *xy*-plane	▪ Analyze an absorption spectrum to determine the Lambda max (wavelength of maximum absorption) ▪ Describe a plot of bacterial growth for a mixture of bacteria with different generation times ▪ Given a graph of profit, revenue, or cost, determine how much should be produced to maximize or minimize the item represented by the graph ▪ Read electrocardiographs and interpret their meaning ▪ Program and code complex video games
▪ Use the definition of trigonometric ratios in a right triangle	▪ Determine the hours of sunlight during different seasons for a solar panel or obstructed garden area ▪ Measure the angle of a ramp design for a wheelchair ▪ Calculate water flow and pipe length to properly fit piping ▪ When piloting a plane, determine the descent angle using a formula ▪ Calculate roof truss loads
▪ Demonstrate fluency with both linear and exponential equations and be able to describe the difference between them	▪ Appropriately model a zero-order reaction such as initial enzyme catalysis with a linear equation, and model a first-order reaction such as radioactive decay or bacterial growth with an exponential equation ▪ Given a function of bacterial growth, determine how far the infection will spread after a given amount of time ▪ Understand and explain how diseases spread

Skill/Knowledge Statements	Examples of Associated Career and Workforce Training Readiness Skills
Score band 271–300	
Students scoring in this band can typically demonstrate the following additional skills and knowledge:	*Students scoring in this band are likely to be able to demonstrate the following additional skills and knowledge in career and workforce settings:*
▪ Make connections between graphical, tabular, and algebraic representations of relationships involving the absolute value function	▪ Make custom fabrications to a helicopter ▪ Predict outcomes between medical treatment options
▪ Demonstrate fluency in using function notation to describe transformations	▪ For molecules that include a 6-8 atom chain, identify identical (superimposable) molecules among 2-dimensional drawings that have undergone translation, rotation, and reflection ▪ In construction, use a design on a scaled grid as a template for decorative motifs that can be dilated, repeated, translated, rotated, and reflected ▪ Adjust a measurement by an offset or scale factor ▪ Compare different economic data sets ▪ Create a 3D graphic in a video game
▪ Solve problems using trigonometric ratios, including within the unit circle	▪ Use surveying diagrams ▪ Perform required and functional duties of an air traffic controller ▪ Make wind corrections when flying a plane
▪ Evaluate inverse functions	▪ Determine appraised value of different property sizes and price per square foot
▪ Evaluate logarithmic expressions	▪ Determine exponential decay of sound and light