Next-Generation ACCUPLACER:
Overview
ACCUPLACER, an assessment system for measuring student readiness for credit-bearing college courses, has been administered for over 30 years.

We have been paying close attention to

- user feedback
- market changes
- research and evidence on what matters most for college and career readiness and success
HOW are we redesigning ACCUPLACER?

Next-generation test specifications are

- Aligned to the same content domain continuum as the redesigned SAT Suite of Assessments: SAT, PSAT/NMSQT, PSAT 8/9
- Aligned to states that have adopted college and career readiness standards
- Connected to instruction
- Developed following College Board’s guiding principles
## Current and Next-Generation ACCUPLACER: Major Features Compared

<table>
<thead>
<tr>
<th>Categories</th>
<th>Current ACCUPLACER</th>
<th>Next-Generation ACCUPLACER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests</td>
<td>• Reading Comprehension</td>
<td>• Reading</td>
</tr>
<tr>
<td></td>
<td>• Sentence Skills</td>
<td>• Writing</td>
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<td></td>
<td>• Arithmetic</td>
<td>• Arithmetic</td>
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<tr>
<td></td>
<td>• Elementary Algebra</td>
<td>• Quantitative Reasoning, Algebra, and Statistics</td>
</tr>
<tr>
<td></td>
<td>• College-Level Math</td>
<td>• Advanced Algebra and Functions</td>
</tr>
<tr>
<td>Score Reporting</td>
<td>• Scale ranges from 20-120</td>
<td>• Scale ranges from 200-300</td>
</tr>
</tbody>
</table>
Next-Generation ACCUPLACER
Reading and Writing Design

Reading

Writing
Reading: Major Features Compared

<table>
<thead>
<tr>
<th>Categories</th>
<th>Current Reading Test</th>
<th>Next-Generation Reading Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Number and Format</td>
<td>• 20 Discrete questions (each question based on a short passage)</td>
<td>• 20 questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 12 discrete questions—either single-sentence vocabulary or based on a short passage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 8 Set-based questions—presented in two sets of four</td>
</tr>
<tr>
<td>Skills Assessed</td>
<td>• Ability to derive meaning from 4 main content categories:</td>
<td>• Ability to derive meaning from 4 main content categories:</td>
</tr>
<tr>
<td></td>
<td>o Main ideas</td>
<td>o Information and ideas</td>
</tr>
<tr>
<td></td>
<td>o Direct statements/Secondary ideas</td>
<td>o Rhetoric</td>
</tr>
<tr>
<td></td>
<td>o Inferences</td>
<td>o Synthesis</td>
</tr>
<tr>
<td></td>
<td>o Applications</td>
<td>o Vocabulary</td>
</tr>
<tr>
<td>Text Type</td>
<td>• Commissioned</td>
<td>• Authentic</td>
</tr>
<tr>
<td></td>
<td>• Informational</td>
<td>• Informational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Literary</td>
</tr>
<tr>
<td>Text Length</td>
<td>• 40-150 words</td>
<td>• 75-400 words</td>
</tr>
<tr>
<td></td>
<td>• Single texts</td>
<td>• Single texts (75-400 words)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Paired texts (~400 words across 2 texts)</td>
</tr>
<tr>
<td>Range of Content Areas</td>
<td>• Arts</td>
<td>• Careers/history/social studies</td>
</tr>
<tr>
<td></td>
<td>• Practical affairs</td>
<td>• Humanities</td>
</tr>
<tr>
<td></td>
<td>• Social sciences</td>
<td>• Science</td>
</tr>
<tr>
<td></td>
<td>• Science</td>
<td>• (The above content areas apply mainly to informational texts. Literary texts are either</td>
</tr>
<tr>
<td></td>
<td>• Human relationships</td>
<td>fiction or literary nonfiction)</td>
</tr>
<tr>
<td>Writing Modes (text types)</td>
<td>• Mostly Informative/Explanatory</td>
<td>• Narrative</td>
</tr>
<tr>
<td></td>
<td>• Occasionally narrative or argument</td>
<td>• Informative/Explanatory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Arguments</td>
</tr>
<tr>
<td>Text Complexity</td>
<td>• Passages of varying complexities written for a primarily late secondary/early</td>
<td>• Defined text complexity scale (middle school to early postsecondary)</td>
</tr>
<tr>
<td></td>
<td>secondary/early postsecondary audience</td>
<td>• Qualitative and quantitative measures of passages’ reading challenge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Next-Generation Reading placement test is a broad-spectrum computer-adaptive assessment of test-takers’ developed ability to derive meaning from a range of prose texts and to determine the meaning of words and phrases in short and extended contexts.
Reading: Content Overview

- 20 multiple-choice questions
  - 8 set-based questions
    - 1st set = 4 questions based on a literary passage
    - 2nd set = 4 questions based on a pair of related passages
  - 12 discrete questions
    - Based on brief informational passages
Reading Set 1: Literary Passage
Reading Set 2: Paired Passages

- Passage 1
- Passage 2

- Question 1 (About Passage 1)
- Question 2 (About Passage 2)
- Question 3 (About Both)
- Question 4 (About Both)
Discrete Questions

- 12 questions
- Passages are informational and range in content areas from science, humanities, or careers/history/social studies
- Passages are 75-200 words long
Reading: Passages

Passages are a mix of previously published and commissioned texts

- **Content areas**
  - Literary (fiction or literary nonfiction)
  - Careers/history/social studies
  - Science
  - Humanities
- **Writing modes**
  - Narrative
  - Informative/Explanatory
  - Argumentative
- **Text complexity ranges**
  - Somewhat challenging (grades 6-8)
  - Moderately challenging (grades 9-10)
  - Complex (grade 11-CCR)
  - Highly complex (early-postsecondary)
- **Text lengths, in standard words** (6 characters)
  - Very short (75-100)
  - Short (150-200)
  - Medium (250-300)
  - Long (350-400)
Reading: Content Domains

Information and Ideas
- reading closely
- determining central ideas and themes
- summarizing
- understanding relationships

Rhetoric (analyzing the following)
- Word choice rhetorically
- Text structure
- Point of view
- Purpose
- Arguments

Synthesis
- Analyzing multiple texts

Vocabulary
- Discrete sentence-based fill-in-the-blank questions
- In-context passage-based questions
Construction management is ideal for someone who has a general interest in building and design. Working as a construction manager affords the chance to learn a construction project from the planning stage with architects and engineers, to the budgeting stage with cost estimators, to the production stage with laborers. And that’s just a small taste of the job’s duties: Construction managers also obtain work permits, hire contractors, troubleshoot emergencies, schedule walkthroughs and keep clients informed on work timetables and progress.

Adapted from “Best Construction Jobs: Construction Manager.” ©2015 by U.S. News & World Report LP.

The passage most strongly emphasizes which aspect of the job of construction management?

A. The variety of its responsibilities
B. The educational background it requires
C. The kind of person for whom it is suitable
D. The amount of stress it inflicts
Sample Question: Rhetoric

**QUESTION**

The descriptive language in sentence 10 is mainly intended to reinforce the passage’s depiction of the Players’

(A) growing resentment of the director’s leadership
(B) increasing reluctance to work as hard as they have been
(C) lingering doubts about their fellow cast members
(D) persistent mood of despair regarding the play

*Partial passage displayed due to space limitations*
QUESTION

Given the evidence in the passages, with which statement would the authors of both passages most likely agree?

(A) Radio telescopes could be used to measure snowfall amounts.

(B) The Green Bank Telescope can detect extremely small amounts of energy.

(C) Increased sales of robotic lawn mowers may require the creation of more radio quiet zones.

(D) The lack of modern technology has made people move away from Pocahontas County.
Deciding that none of the nominees was ____________ the award, the film committee began reviewing a new group of candidates with better qualifications.

(A) known for
(B) pleased with
(C) worthy of
(D) interested in
The Next-Generation Writing placement test is a broad-spectrum computer-adaptive assessment of test-takers’ developed ability to revise and edit a range of prose texts for effective expression of ideas and for conformity to the conventions of Standard Written English sentence structure, usage, and punctuation.
## Writing: Major Features Compared

<table>
<thead>
<tr>
<th>Categories</th>
<th>CLASSIC Writing Test (Sentence Skills)</th>
<th>Next-Generation Writing Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item format</strong></td>
<td>20 discrete questions</td>
<td>25 questions (in 5 sets of 5)</td>
</tr>
<tr>
<td><strong>Skills Assessed</strong></td>
<td>• Assesses ability to revise single sentences to achieve:</td>
<td>• Assesses ability to revise and edit multi-paragraph texts for:</td>
</tr>
<tr>
<td></td>
<td>o Complete sentences</td>
<td>o Expression of Ideas (Development, Organization, and effective language use)</td>
</tr>
<tr>
<td></td>
<td>o Proper coordination and subordination</td>
<td>o Standard English Conventions (Sentence Structure, Conventions of Punctuation, Conventions of Usage)</td>
</tr>
<tr>
<td><strong>Text Type</strong></td>
<td>• Commissioned sentence</td>
<td>• Commissioned essay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Literary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Informational</td>
</tr>
<tr>
<td><strong>Text Length</strong></td>
<td>• Single sentence</td>
<td>• Extended prose</td>
</tr>
<tr>
<td></td>
<td>o 5-25 words</td>
<td>o Single, unified texts (300-350 words)</td>
</tr>
<tr>
<td><strong>Range of content areas</strong></td>
<td></td>
<td><strong>Writing modes (text types)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Narrative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Informative/Explanatory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Arguments</td>
</tr>
<tr>
<td><strong>Writing modes (text types)</strong></td>
<td></td>
<td><strong>Text Complexity</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Defined text complexity scale (middle school to early postsecondary)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Qualitative and quantitative measures of passages’ reading challenge</td>
</tr>
<tr>
<td><strong>Text Complexity</strong></td>
<td>• Measures students’ understanding of sentence structure, using a range of sentences appropriate to the testing population</td>
<td>• Defined text complexity scale (middle school to early postsecondary)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Qualitative and quantitative measures of passages’ reading challenge</td>
</tr>
</tbody>
</table>
Writing: Content Overview

- 25 questions total
- 5 passage-based sets consisting of 5 questions each
Writing: Passages

Content areas
- Literary (literary nonfiction)
- Careers/history/social studies
- Science
- Humanities

Writing modes
- Narrative
- Informative/Explanatory
- Argumentative

Text complexity ranges
- Somewhat complex (grades 6-8)
- Moderately complex (grades 9-10)
- Complex (grade 11-CCR)
- Highly complex (early-postsecondary)

Text length
- 300-350 standard words (6 characters)
Writing: Question Content Domains

Expression of Ideas
• Development
• Organization
• Effective Language Use

Standard English Conventions
• Sentence Structure
• Conventions of Punctuation
• Conventions of Usage
Writing: Content Domains

Expression of Ideas

• Development
  o Proposition
  o Support
  o Focus

• Organization
  o Logical sequence
  o Introductions, Conclusions, and Transitions

• Effective Language Use
  o Precision
  o Concision
  o Style and Tone
  o Syntax
Sample Question: Development

Read the following early draft of an essay and then choose the best answer to the question or the best completion of the statement.

PASSAGE*

(14) Few spiders propel themselves as *C. rechenbergi* do, and none do so as comprehensively. (15) Golden rolling spiders of Namibia, for instance, can tumble, but they do so only using gravity to roll downhill. (16) *C. rechenbergi*, by contrast, elude predators by rolling uphill, downhill, or on flat ground. (17) Their reproductive organs distinguish them from other *Cebrennus* spiders. (18) While these spiders run only 3.3 feet per second, they can tumble at 6.6 feet per second. (19) Even if this speedy escape method proves effective, however, it can be costly: tumbling away too many times a day will ultimately exhaust the spiders and lead to their demise.

QUESTION

Which sentence blurs the focus of the last paragraph and should therefore be deleted?

(A) Sentence 14
(B) Sentence 15
(C) Sentence 16
(D) Sentence 17

*Partial passage displayed due to space constraints*
In context, which is the best version of the underlined portion of sentence 10 (reproduced below)?

_Ultimately, the spider was determined to be a member of a previously unknown species._

(A) (As it is now)
(B) For example,
(C) Nevertheless,
(D) At the same time,
Sample Question: Effective Language Use

Directions: Read the following early draft of an essay and then choose the best answer to the question or the best completion of the statement.

PASSAGE*

(10) Clifton’s powerful and innovative poems have been widely recognized and appreciated. (11) Poet Remica Bingham called Clifton a “master of economy and minimalism.” (12) Of Clifton’s ambitious lines, poet Kevin Young said, “There is a kind of quietude in that lowercase, but also a boldness of speech” that achieves a “powerful intimacy.” (13) One of her former students, poet Elisabeth Whitehead, recalls fondly Clifton’s college classroom as a place of quiet where poetry was loved and celebrated. (14) A fellow student hosted dinner for their final class, and before everyone had left that evening, Clifton had them gather and join hands. (15) “Then we went around the circle,” Whitehead recounts, “sharing an idea or a quote or passage from a poem in our last moments together.”

*Partial passage displayed due to space constraints

QUESTION

In sentence 12 (reproduced below), the writer wants to echo Bingham’s observation from sentence 11. Which version of the underlined portion best accomplishes that goal?

Of Clifton’s ambitious lines, poet Kevin Young said, “There is a kind of quietude in that lowercase, but also a boldness of speech” that achieves a “powerful intimacy.”

(A) (as it is now)
(B) spare
(C) nuanced
(D) vivid
Standard English Conventions

• Sentence Structure
  o Sentence boundaries, subordination and coordination, parallel structure, modifier placement, inappropriate shifts in verb tense and mood, inappropriate shifts in pronoun person and number

• Conventions of Usage
  o Possessive determiners, noun agreement, pronoun clarity, pronoun-antecedent agreement, subject-verb agreement, frequently confused words, logical comparison, conventional expression

• Conventions of Punctuation
  o End of sentence punctuation, within-sentence punctuation, possessive nouns and pronouns, items in series, nonrestrictive and parenthetical elements, hyphenation conventions, unnecessary punctuation
PASSAGE*
(1) The prevalence of nectarines in US supermarkets today is directly related to the company started by two unrelated men who shared a last name, an inventive bent, and a drive to succeed. (2) Moving from Korea to the United States in 1914, Ho “Charles” Kim founded the Kim Brothers trucking company in California in 1921 with his friend Harry Kim. (3) Much of the freight their trucks carried in the early years were fruit grown in the San Joaquin valley. (4) Kim Brothers soon expanded to include nurseries, orchards, and fruit-packing sheds. (5) Eventually the operation became a major employer, providing year-round jobs for about two hundred people and up to four hundred part-time jobs during harvest season coming after growing season.

*Partial passage displayed due to space constraints

Sample Question: Standard English Conventions

Directions:
Read the following early draft of an essay and then choose the best answer to the question or the best completion of the statement.

PASSAGE*
(1) The prevalence of nectarines in US supermarkets today is directly related to the company started by two unrelated men who shared a last name, an inventive bent, and a drive to succeed. (2) Moving from Korea to the United States in 1914, Ho “Charles” Kim founded the Kim Brothers trucking company in California in 1921 with his friend Harry Kim. (3) Much of the freight their trucks carried in the early years were fruit grown in the San Joaquin valley. (4) Kim Brothers soon expanded to include nurseries, orchards, and fruit-packing sheds. (5) Eventually the operation became a major employer, providing year-round jobs for about two hundred people and up to four hundred part-time jobs during harvest season coming after growing season.

QUESTION
Which is the best version of the underlined portion of sentence 3 (reproduced below)?

Much of the freight their trucks carried in the early years were fruit grown in the San Joaquin valley.

(A) (as it is now)
(B) have been
(C) are
(D) was
Next-Generation ACCUPLACER Math Design

- Arithmetic
- Quantitative Reasoning, Algebra, and Statistics
- Advanced Algebra and Functions

(QAS) (AAF)
Math: Key New Features

• Content coverage driven by the same research “math that matters most” underlying the redesigned SAT
• Content aligned to state college and career readiness standards
• Test design approach considers both STEM and non-STEM math pathways
• Content strands cover prerequisites for Quantitative Reasoning and Statistics pathways
Next-Generation Arithmetic

The Next-Generation Arithmetic placement test is a computer-adaptive assessment of test-takers’ developed ability for selected mathematics content. Questions will focus on computation, order of operations, estimation and rounding, comparing and ordering values in different formats, and recognizing equivalent values across formats.
## Arithmetic: Major Features Compared

<table>
<thead>
<tr>
<th>Categories</th>
<th>Current Arithmetic Test</th>
<th>Next-Generation Arithmetic Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Length</td>
<td>• 17 items</td>
<td>• 20 items</td>
</tr>
<tr>
<td>Content Assessed</td>
<td>• Whole numbers and fractions</td>
<td>• Whole number operations</td>
</tr>
<tr>
<td></td>
<td>• Decimals and percents</td>
<td>• Fraction operations</td>
</tr>
<tr>
<td></td>
<td>• Applications</td>
<td>• Decimal operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number comparisons and equivalents</td>
</tr>
<tr>
<td>Skills Assessed</td>
<td>• Computation/fluency</td>
<td>• Computation/fluency</td>
</tr>
<tr>
<td></td>
<td>• Applications sectioned out in 1 strand only</td>
<td>• Conceptual understanding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Applications woven throughout most strands</td>
</tr>
<tr>
<td>Item types</td>
<td>• Discrete</td>
<td>• Discrete</td>
</tr>
<tr>
<td>Calculator Availability</td>
<td>• 4-function available for some items that do not assess computation</td>
<td>• 4-function available for some items that do not assess computation</td>
</tr>
</tbody>
</table>
Arithmetic: Test Overview

- 20 discrete multiple-choice questions
- Skills assessed
  - Computational fluency
  - Applications
  - Conceptual understanding
- Calculator usage
  - 4-function calculator available for some items
• Whole number operations (3-5 items)
  o Addition, subtraction, multiplication and division of whole numbers, including order of operations, estimation and rounding, and applying operations to real-life contexts
• Fraction operations (3-5 items)
  o Addition, subtraction, multiplication and division of fractions and mixed numbers, including order of operations, estimation and rounding, and applying operations to real-life contexts
• Decimal operations (3-5 items)
  o Addition, subtraction, multiplication and division of decimal numbers, including order of operations, estimation and rounding, and applying operations to real-life contexts
• Percent (3-5 items)
  o Calculation with percent with or without a context, including percent increase, percent decrease, determining the percent of a number, and applying percent to real-life contexts
• Number comparisons and equivalents (3-5 items)
  o Comparisons of differently formatted values by ordering, using the number line, and using equality/inequality symbol notation; and evaluation of equivalent number statements (to assess mental math strategies)
What is the value of $2.84 \times 3.9$?

(A) 3.408
(B) 11.076*
(C) 34.08
(D) 110.76

Alignment: Decimal operations
Calculator available: None
Quantitative Reasoning, Algebra, and Statistics (QAS): Major Features Compared

<table>
<thead>
<tr>
<th>Categories</th>
<th>Current Elementary Algebra Test</th>
<th>Next-Generation QAS Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Length</td>
<td>• 12 items</td>
<td>• 20 items</td>
</tr>
<tr>
<td>Content Assessed</td>
<td>• Integers and rationals</td>
<td>• Rational numbers</td>
</tr>
<tr>
<td></td>
<td>• Algebraic expressions</td>
<td>• Ratio and proportional relationships</td>
</tr>
<tr>
<td></td>
<td>• Equations, inequalities, and word problems</td>
<td>• Exponents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Algebraic expressions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Linear equations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Linear applications and graphs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Probability and sets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Geometry concepts</td>
</tr>
<tr>
<td>Skills Assessed</td>
<td>• Computation/fluency</td>
<td>• Computation/fluency</td>
</tr>
<tr>
<td></td>
<td>• Applications sectioned out in 1 strand only</td>
<td>• Conceptual understanding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Applications woven throughout many strands</td>
</tr>
<tr>
<td>Item types</td>
<td>• Discrete</td>
<td>• Discrete</td>
</tr>
<tr>
<td>Calculator Availability</td>
<td>• 4-function calculators available for some items</td>
<td>• 4-function and square-root calculators available for some items</td>
</tr>
</tbody>
</table>
The Next-Generation Quantitative Reasoning, Algebra, and Statistics placement test is a broad-spectrum computer-adaptive assessment of test-takers’ developed ability for selected mathematics content suited for students entering many non-STEM fields of study or for students who are undecided on a major. Questions focus on a range of topics including computing with rational numbers, applying ratios and proportional reasoning, creating linear expressions and equations, graphing and applying linear equations, understanding probability and sets, and interpreting graphical displays.
QAS: Test Overview

- 20 discrete multiple-choice questions
- Skills assessed
  - Computational fluency
  - Applications
  - Conceptual understanding
- Calculator usage
  - 4-function and square root calculators available for some items
QAS: Content Strands Overview (20 items)

- **Rational numbers** (1-3 items)
  - Calculating and applying rational numbers (with or without a context), including usage of absolute value

- **Ratio and proportional relationships** (3-4 items)
  - Calculating with rates, ratios, and proportions (with or without a context), and using unit conversions

- **Exponents** (2-3 items)
  - Calculating with exponents, radicals, fractional exponents, and applying scientific notation

- **Algebraic expressions** (2-3 items)
  - Creating and evaluating expressions to represent situations, and using properties of operations to combine like terms and identify equivalent expressions

- **Linear equations** (2-4 items)
  - Creating linear equations in one or two variables, solving linear equations, simplifying linear equations and inequalities, and solving systems of two linear equations

- **Linear applications and graphs** (2-4 items)
  - Applying linear equations to real-life contexts, using elementary linear functions to describe relationships, and graphing linear equations in two variables, linear inequalities, parallel and perpendicular lines, and systems of equations
QAS: Content Strands Overview (20 items)

(Continued from previous slide)

- **Probability and sets** (1-3 items) Calculating probability (simple, compound, and conditional), and defining sample spaces and events using set notation.

- **Descriptive statistics** (1-3 items) Interpreting graphical displays of data (histograms, box plots, and scatter plots), describing shape and spread of a sample set, and calculating measures of center.

- **Geometry concepts for HS Pre-Algebra** (1-2 items) Determining area and perimeter, circle area and circumference, and volume of prisms.

- **Geometry concepts for HS Algebra 1** (1-2 items) Creating expressions for area, perimeter, and volume, using distance formula and Pythagorean theorem, and evaluating basic geometric transformations.
Water runs from a pump at a rate of 1.5 gallons per minute. At this rate, how long would it take to fill a tub with a 150-gallon capacity?

(A) 10 minutes

(B) 100 minutes*

(C) 225 minutes

(D) 2,250 minutes

Alignment: Ratio and proportional reasoning

Calculator available: 4-function
QAS Sample Item 2

<table>
<thead>
<tr>
<th>Country</th>
<th>Approximate population (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>65.9</td>
</tr>
<tr>
<td>Germany</td>
<td>80.8</td>
</tr>
<tr>
<td>Italy</td>
<td>60.8</td>
</tr>
<tr>
<td>Spain</td>
<td>46.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>64.3</td>
</tr>
</tbody>
</table>

The table above gives the population of the 5 largest countries in the European Union in the year 2014. Which of the following is the closest to the mean population of these countries?

(A) 80.8 million
(B) 64.3 million
(C) 63.7 million*
(D) 60.8 million

Alignment: Descriptive statistics
Calculator available: 4-function
QAS Sample Item 3

Which of the following is an equation of the line that passes through the point (0, 0) and is perpendicular to the line shown to the right?

(A) $y = \frac{5}{4}x$

(B) $y = \frac{5}{4}x + 3$

(C) $y = -\frac{4}{5}x$

(D) $y = -\frac{4}{5}x + 3$
## Advanced Algebra and Functions (AAF): Major Features Compared

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<td>• 4-function available for some items</td>
<td>• 4-function, square-root, and graphing calculators available for some items</td>
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The Next-Generation Advanced Algebra and Functions placement test is a broad-spectrum computer-adaptive assessment of test-takers’ developed ability for selected mathematics content suited for students entering STEM fields of study, as well as students entering non-STEM fields of study that require some advanced math (e.g., medicine, economics, accounting). Questions will focus on a range of topics including a variety of equations and functions, including linear, quadratic, rational, radical, polynomial, and exponential. Questions will also delve into some geometry and trigonometry concepts.
AAF: Test Overview

- 20 discrete multiple-choice questions
- Skills assessed
  - Computational fluency
  - Applications
  - Conceptual understanding
- Calculator usage
  - 4-function, square root, and graphing calculators available for some items
Linear equations (2-3 items)
  o Creating linear equations in one or two variables, solving linear equations, simplifying linear equations and inequalities, and solving systems of two linear equations

Linear applications and graphs (2-3 items)
  o Applying linear equations to real-life contexts, using elementary linear functions to describe relationships, and graphing linear equations in two variables, linear inequalities, parallel and perpendicular lines, and systems of equations

Factoring (1-2 items)
  o Factoring methods applied to quadratics, cubics, and polynomials

Quadratics (2-3 items)
  o Creating quadratic equations in one or two variables, solving quadratic equations (via factoring or using the quadratic equation), simplifying quadratic equations and inequalities, and solving systems that involve a quadratic equation

Functions (2-4 items)
  o Creating functions using function notation, evaluating linear and quadratic functions, graphing functions, and interpreting functions within a context

Polynomial equations (1-3 items)
  o Creating polynomial equations in one and two variables, solving polynomial equations, and graphing polynomial functions
AAF: Content Overview (20 items)

(Continued from previous slide)

- **Radical and rational equations** (1-3 items)
  - Creating radical and rational equations and functions in one variable, determining domain and range for radical and rational functions, graphing radical and rational functions, and simplifying radical and rational expressions and equations

- **Exponential and logarithmic equations** (1-3 items)
  - Creating exponential and logarithmic equations in one and two variables, solving exponential and logarithmic equations, graphing exponential and logarithmic functions, and interpreting exponential and logarithmic functions

- **Geometry concepts for HS Algebra 1** (1-2 items)
  - Creating expressions for area, perimeter, and volume, using distance formula and Pythagorean theorem, and evaluating basic geometric transformations

- **Geometry concepts for HS Algebra 2** (1-2 items)
  - Determining volume of nonprism objects, using intersecting line theorems, using triangle similarity and congruency theorems, and using circle equations in the coordinate plane

- **Trigonometry** (1-3 items)
  - Solving trigonometric equations, using right triangle trigonometry including special triangles, evaluating equivalent trigonometric functions, graphing trigonometric relationships, determining arc length and radian measures, and using the law of sines and the law of cosines
Function \( g \) is defined by \( g(x) = 3(x + 8) \). What is the value of \( g(12) \)?

(A) –4
(B) 20
(C) 44
(D) 60
A biologist puts an initial population of 500 bacteria into a growth plate. The population is expected to double every 4 hours. Which of the following equations gives the expected number of bacteria, $n$, after $x$ days? (24 hours = 1 day)

(A) $n = 500(2)^x$
(B) $n = 500(2)^{6x}$
(C) $n = 500(6)^x$
(D) $n = 500(6)^{2x}$

Alignment: Exponential and logarithmic equations
Calculator available: 4-function
The graph of \( y = f(x) \) is shown in the \( xy \)-plane on the right.

Which of the following equations could define \( f(x) \)?

(A) \( f(x) = x^2 - 2x - 8 \)

(B) \( f(x) = -x^2 + 2x - 8 \)

(C) \( f(x) = (x - 2)(x + 4) \)

(D) \( f(x) = -(x - 1)^2 - 9 \)
Resources
Next-generation ACCUPLACER Resources

https://accuplacer.collegeboard.org/next-generation

► Next-generation ACCUPLACER Test Specifications
  ► Test Description
  ► Test Summary
  ► Description of Question Content
  ► Key Features

► Sample Questions
  ► Answer Key
  ► Rationale for correct and incorrect responses to each question

► Free Study App
  ► Students can explore test content and format
  ► Receive immediate explanation of each question’s correct response
Next-Generation ACCUPLACER Resources

https://accuplacer.collegeboard.org/next-generation

- Next-Generation Test Specifications
- Free Study App
- FAQs

Sample Questions

- Next-Generation Reading
- Next-Generation Writing
- Next-Generation Arithmetic
- Next-Generation Quantitative Reasoning, Algebra, and Statistics
- Next-Generation Advanced Algebra and Functions
Next-Generation ACCUPLACER®

For over 30 years, ACCUPLACER has been used successfully in combination with factors such as high school GPA, to assess student preparedness for introductory credit-bearing courses. During this time, the College Board has paid close attention to:

- Research and evidence on what matters most for college and career readiness
- Changes in academic standards, curriculum, and instruction in core academic areas
- Feedback from ACCUPLACER users, including faculty, teachers, counselors, focus groups, and advisory panels

Starting in September 2016, new next-generation ACCUPLACER placement tests will be available, with redesigned reading, writing, and math content. Next-generation ACCUPLACER placement tests are designed to more effectively help institutions place students in classes that match their skill level, and include tests and tasks encountered in first-year college courses. The new tests:

- Align to the same content domain continuum as the redesigned SAT Suite of Assessments
- Help institutions improve course placement accuracy
- Reflect the changing landscape of higher education with math sequences aligned to clear pathways

ACCUPLACER users will have the option of administering either the current tests or the next-generation tests but not both at the same time.

Inside the Tests

[ACCUPLACER.collegeboard.org/next-generation](http://ACCUPLACER.collegeboard.org/next-generation)
Test Specifications

For each Next-Generation test:

- Test Description
- Test Summary
- Description of Question Content
- Key Features
Sample Questions

1. Which of the following expressions is 5 times as much as the sum of $r$ and $s$?
   A. $5 \times r + s$
   B. $5 + r + s$
   C. $r + s \times 5$
   D. $(r + s) \times 5$

Rationales

1. **Choice D is correct.** The order of operations was used properly to write the expression. The sum of $r$ and $s$ in parentheses is found first, then multiplication is used to find the number that is 5 times the sum of $r$ and $s$. Choice A is incorrect because this is the sum of $s$ and 5 times as much as $r$. Choice B is incorrect because this is the sum of 5, $r$, and $s$. Choice C is incorrect because this is the sum of $r$ and 5 times as much as $s$. 
Free Web Study App
Thank you

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