



SAMPLES OF STANDARDS STUDENTS ARE LEARNING THIS NINE WEEKS:

8th Grade Compacted Math

STANDARDS: 8.EE.8b, 8.EE.8c, AREI.6, AREI.11, A-CED.1, A-REI.11, A-SSE-2, F-BF.1

8.EE.8c

Mr. Thomsen is buying two types of gift cards to give as prizes to employees at a company meeting. He will buy restaurant gift cards that each cost \$50. He will also buy movie theater gift cards that each cost \$20. He has \$450 to buy a total of 15 gift cards. How many of each type of gift card can Mr. Thomsen buy?

- A He can buy 5 restaurant gift cards and 10 movie theater gift cards.
- B He can buy 8 restaurant gift cards and 7 movie theater gift cards.
- C He can buy 10 restaurant gift cards and 5 movie theater gift cards.
- D He can buy 12 restaurant gift cards and 3 movie theater gift cards.

Option A is correct.

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A-REI.11

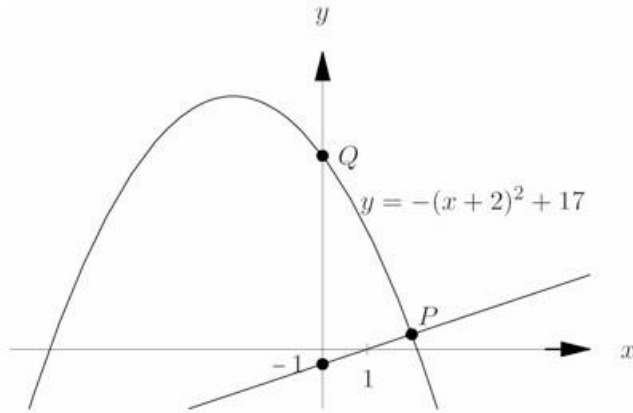
Let $f(x) = \frac{x+2}{x^2+5x+6}$ and $g(x) = \frac{1}{6}x^2 + \frac{1}{3}$ over the interval $[-3, 2]$. How many solutions for the equation $f(x) = g(x)$ exist over that interval?

- 1
- 2
- 3
- 4

Option B is correct.

AREI.11

The figure below shows a **partial** graph of two functions, $f(x)$ and $g(x)$. $f(x)$ is a parabola defined by the quadratic function $f(x) = -(x+2)^2 + 17$ and $g(x)$ is a linear function that passes through the points $(0, -1)$ and $(1, 0)$.



Respond to Part A and Part B based on the given information.

Part A:

Determine the x-coordinate of the point in Quadrant III where $f(x) = g(x)$.

Part B:

Justify algebraically why the x-coordinate you identified in Part A is a solution to the equation $f(x) = g(x)$.

Answer:

Part A: $x = -7$

Part B: Student must show that

$$g(x) = x - 1.$$

Student must show that $f(-7) = g(-7)$

$$f(-7) = -[(-7) + 2]^2 + 17 = -8$$

$$g(-7) = -7 - 1 = -8$$

A-SSE.2

Let $f(x) = \frac{x+2}{x^2+5x+6}$ and $g(x) = \frac{1}{6}x^2 + \frac{1}{3}$ over the interval $[-3, 2]$. How many solutions for the equation $f(x) = g(x)$ exist over that interval?

- 1
- 2
- 3
- 4

Option A is correct.

AREI.6

Two linear functions in a coordinate plane have no points of intersection. Which pair of functions listed below could be the equation for these two linear functions?

- A. $4x + 2y = 6$ and $10x + 5y = 7$
- B. $4x + 2y = 6$ and $10x + 5y = 15$
- C. $4x + 2y = 6$ and $y = 0.5x - 0.6$
- D. $5x + 10y = 6$ and $y = 0.5x - 0.6$

Option A is correct.

A-CED.1

A jewelry maker is designing a crown. The crown must have at least 45 gems, using only emeralds, rubies, and diamonds. The number of rubies must be 1 less than 3 times the number of emeralds. The number of diamonds must be 4 less than the number of rubies. Which inequality could the jewelry maker use to find the fewest number of emeralds, x , that can be placed on the crown?

- $x - 4 + 3x - 1 + x \geq 45$
- $x + x - 1 + x - 1 - 4 \geq 45$
- $x + 3x - 1 + 3x - 1 - 4 \geq 45$
- $3x - 1 + 3x - 1 - 4 \geq 45$

Option C is correct.

F-BF-1

Andrew has \$500,000 in a retirement fund. He plans to start withdrawing \$6,500 each year.

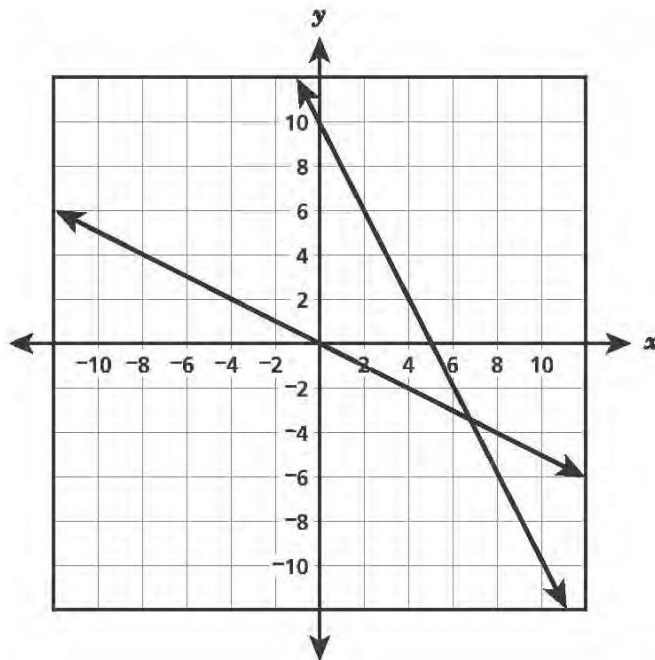
Which expression shows the remaining amount in his fund after t years?

- $500,000 - 6,500$
- $500,000 - 6,500t$
- $500,000 + 6,500$
- $500,000 + 6,500t$

Option B is correct.

8.EE.8b

The graph of a system of equations is shown below.



What system of equations represents the graph?

A $y = -2x + 10$
 $y = -\frac{1}{3}x$

B $y = -2x + 10$
 $y = -\frac{1}{2}x$

C $y = -\frac{1}{2}x + 10$
 $y = -2x$

D $y = -\frac{1}{3}x + 10$
 $y = -2x$

Option A is correct.