

## Benchmark Review



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-9

Which point is a solution to the following system?

$$\begin{cases} y = 2(x - 2)^2 - 3 \\ y = -2x + 5 \end{cases}$$

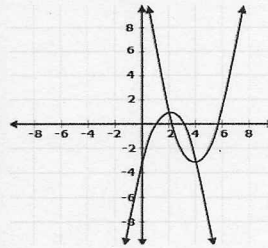
- (0, 3)
- (0, 5)
- (2, -3)
- No solution

## Benchmark Review



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-9

This graph shows equations  $f(x) = (x - 4)^2 - 3$  and  $g(x) = -(x - 2)^2 + 1$ .



Select all answer choices that best represent solutions to the equation  $f(x) = g(x)$ .

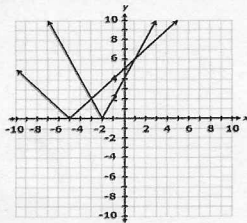
- $x = -3$
- $x = 1$
- $x = 2$
- $x = 3$
- $x = 4$

## Benchmark Review



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 2-7

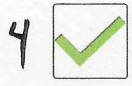
A system of equations is graphed on the coordinate plane below.



Choose the solutions to the system of equations. Select two that apply.

- (-5, 0)
- (-3, 2)
- (-2, 0)
- (0, 4)
- (1, 6)

## Benchmark Review



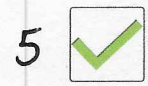
Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-6, 4-7

Kayla squared a number  $x$  and added this result to  $-6.5$ . This gave her an answer of  $42.5$ .

What is the equation and one of the solutions to this equation?

- $x^2 + (-6.5) = 42.5; x = 7$
- $x^2 + (-6.5) = 42.5; x = 6$
- $2x + (-6.5) = 42.5; x = 24.5$
- $2x + (-6.5) = 42.5; x = 18$

## Benchmark Review



Standard(s) Addressed: A2.F.BF.A.1  
Corresponding Lesson(s): 1-5

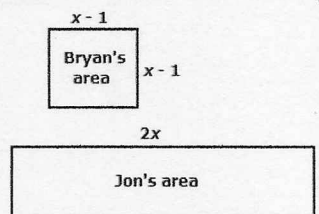
Alfonso makes \$8.00 per hour working at a movie theater and \$12.00 per hour working at a restaurant. Next week, Alfonso is scheduled to work 6 hours at the movie theater. Which of the following inequalities represent the amount of hours ( $h$ ) that Alfonso needs to work at the restaurant next week to earn at least \$144 between his two jobs?

- $8 \cdot 6 + 12h \geq 144$
- $8h + 12 \cdot 6 \geq 144$
- $8h + 12h \geq 144$
- $8 \cdot 6 + 12 \cdot 6 \geq 144h$

## Benchmark Review



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-6, 4-7



From the drawing above, Bryan discovered that his area was 2 less than Jon's area. What is the reasonable value of  $x$ ?

- 1
- 3
- 4.236
- not defined

## Benchmark Review

7 

Standard(s) Addressed: A2.A.CED.A.2  
Corresponding Lesson(s): 1-4

Which equation is equivalent to  $6 = \frac{4(z+9)}{y+2}$  when solved for  $y$ ?

- $y = \frac{4z-3}{6}$
- $y = \frac{4z+7}{6}$
- $y = \frac{2z+12}{3}$
- $y = \frac{2z+17}{3}$

## Benchmark Review

8 

Standard(s) Addressed: A2.A.CED.A.2  
Corresponding Lesson(s): 1-4

The Vanderbloom family already traveled 200 miles on their vacation. The total distance that they will travel ( $d$ ) is a function of their rate of travel ( $r$ ) and their upcoming travel time ( $t$ ). This is represented with the equation given below.

$$d = \frac{r}{t} + 200$$

Solve the equation given above for  $t$ .

- $t = \frac{d-200}{r}$
- $t = \frac{d}{r} - 200$
- $t = \frac{r}{d-200}$
- $t = \frac{r}{d} - 200$

## Benchmark Review

9 

Standard(s) Addressed:  
Corresponding Lesson(s):

Use the information given to answer questions.

The sales tax for all items in a store is 8%, added after all discounts are applied. Let  $f(x)$  represent the price of an item, including sales tax, and  $g(x)$  represent the effect of a discount on the price of an item, not including sales tax.

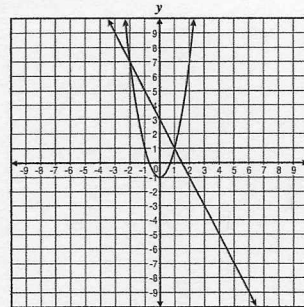
Which function  $f(x)$  represents the price of an item, including sales tax, that originally costs  $x$  dollars?

- $f(x) = 0.2x$
- $f(x) = 0.92x$
- $f(x) = 1.08x$
- $f(x) = 1.2x$

## Benchmark Review

10 

Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-9

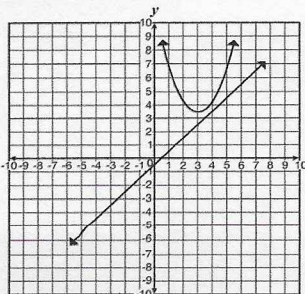


- $y = x^2 - 1$   
 $2x + y = 3$
- $y = 2x^2 - 1$   
 $2x + y = 3$
- $y = x^2 - 1$   
 $2x - y = 3$
- $y = 2x^2 - 1$   
 $2x - y = 3$

## Benchmark Review

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Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-9



Which statement BEST describes the solutions to this system?

- There are 2 real solutions to this system.
- There are no real solutions to this system.
- There is only one real solution to this system.
- There are infinitely many real solutions to this system.

## Benchmark Review

12 

Standard(s) Addressed: A2.A.REI.C.4, A2.A.REI.D.6  
Corresponding Lesson(s): 3-1 thru 3-3

Joaquin is four more than half Marjorie's age. Marjorie is also 32 less than three times Joaquin's age.

How old is Marjorie?

- 24 years old
- 28 years old
- 40 years old
- 54 years old



## Benchmark Review

13



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-8

Which expression is equivalent to  $4 + 5i \cdot (2 - 7i)$ ?

- $-31 + 10i$
- $4 + 3i$
- $14 - 35i$
- $39 + 10i$

## Benchmark Review

14



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-8

For this item, select the answers in the choice matrix by clicking the appropriate boxes in each row.

A choice matrix is shown. Complete the choice matrix by matching each expression to its correct simplification.

	$-28 + 14i$	$-2 + 11i$	$2 + 3i$	$28 + 14i$
$(7i) - (2 - 4i)$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$(7i) + (2 - 4i)$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$(7i)(2 - 4i)$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$(7i)(2 + 4i)$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Benchmark Review

15



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-6, 4-7

Briana is making a rectangular blanket. The length of the blanket is 10 inches greater than the width, in inches.

- a. Write the function  $B(w)$ , that describes the area, in square inches, of width,  $w$ .

- b. If the area is 56 square inches. Find the length and width.  $w =$    $l =$

## Benchmark Review

16



Standard(s) Addressed: A2.A.CED.A.2  
Corresponding Lesson(s): 1-4

The three angles of a triangular sail have a sum of  $180^\circ$ . The largest angle measures  $90^\circ$  and the smallest angle measures  $x^\circ$ . In degrees, which expression shows the measure of the third angle.

- A  $180 + 90 + x$    B  $180 + 90 - x$    C  $180 - 90 - x$    D  $180 - 90 - x$

## Benchmark Review

17



Standard(s) Addressed: A2.A.CED.A.2  
Corresponding Lesson(s): 1-4

Milo buys an order of copper, he pays \$45 for the first pound and \$42 for each additional pound. Which of the expressions represent the total cost (in \$) of an order of  $p$  pounds.

- A  $45 + 42p$    B  $45 + 42(p - 1)$    C  $45 + 42(p + 1)$    D  $87p$

## Benchmark Review

18



Standard(s) Addressed: A2. F.BF.A.1  
Corresponding Lesson(s): 1-5

Natalie borrowed \$1800 from her mother to purchase a pre-owned car. She agrees to repay this amount by paying her mother \$45 per week. This situation can be modeled by the function  $f(x) = 1800 - 45x$ . Which inequality represents the domain for this function?

- A  $-40 \leq x \leq 40$    B  $-10 \leq x \leq 10$    C  $0 \leq x \leq 40$    D  $0 \leq x \leq 52$

## Benchmark Review

19



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-8

Select all expressions equivalent to  $26i$ .

- A  $(13i)(2i)$       C  $(4 + 6i)(3 + 2i)$       E  $(7 + 12i) - (7 - 14i)$   
B  $13 + i + 13$       D  $13i + 13i + 5i + 5i$       F  $(-13i)(2i)$

## Benchmark Review

20



Standard(s) Addressed: A2.A.CED.A.2  
Corresponding Lesson(s): 1-4

Sam has 100 cheese slices to make sandwiches. The equation  $s = \frac{100}{c}$  can be used to find  $s$ , the number of sandwiches he can make based on  $c$ , the number of cheese slices per sandwich. Which equation is the same when solved for  $c$  in terms of  $s$ ?

- A  $c = \frac{100}{s}$       B  $s = 100 - s$       C  $c = \frac{s}{100}$       D  $c = s - 100$

## Benchmark Review

21



Standard(s) Addressed: A2.A.REI.C.4, A2.A.REI.D.6  
Corresponding Lesson(s): 3-1 thru 3-3

Kayla and her friends bought 4 bags of popcorn and 3 sodas at a movie for a total of \$13.50. At the next movie, Kayla bought 2 bags of popcorn and 5 sodas for a total of \$12.00. How much will Kayla pay if she buys 5 bags of popcorn and 2 sodas?

## Benchmark Review

22



Standard(s) Addressed: A2.A.CED.A.2  
Corresponding Lesson(s): 1-4

The formula for the surface area of a cylinder is  $A = 2\pi r^2 + 2\pi r h$ , where  $r$  is the radius and  $h$  is the height. What is the equation for the height  $h$  of a cylinder in terms of  $A$ ?

- A  $h = 2\pi A^2 + 2\pi r A$       B  $\frac{A - 2\pi r^2}{2\pi r}$       C  $\frac{2\pi r^2}{A}$       D  $h = (A - r)$

## Benchmark Review

23



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-6, 4-7

A quadratic equation is given as  $3x^2 + 4x + 6 = 0$ . Write the solution(s) in equivalent form. If there is only one answer, leave the second response box blank.

## Benchmark Review

24



Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-7

A student is solving a quadratic equation. The first step to determining the solution is shown below. Which expression describes the solution or solutions to this quadratic equation?

$$x = \frac{0 \pm \sqrt{(0)^2 - 4(1)(2)}}{2(1)}$$

- A one real solution      B two real solutions  
C one imaginary solution      D two imaginary solutions



## Benchmark Review

Standard(s) Addressed: A2.A.REI.B.3  
Corresponding Lesson(s): 4-6, 4-7

25



Solve  $2(x + 4)^2 - 113 = 49$