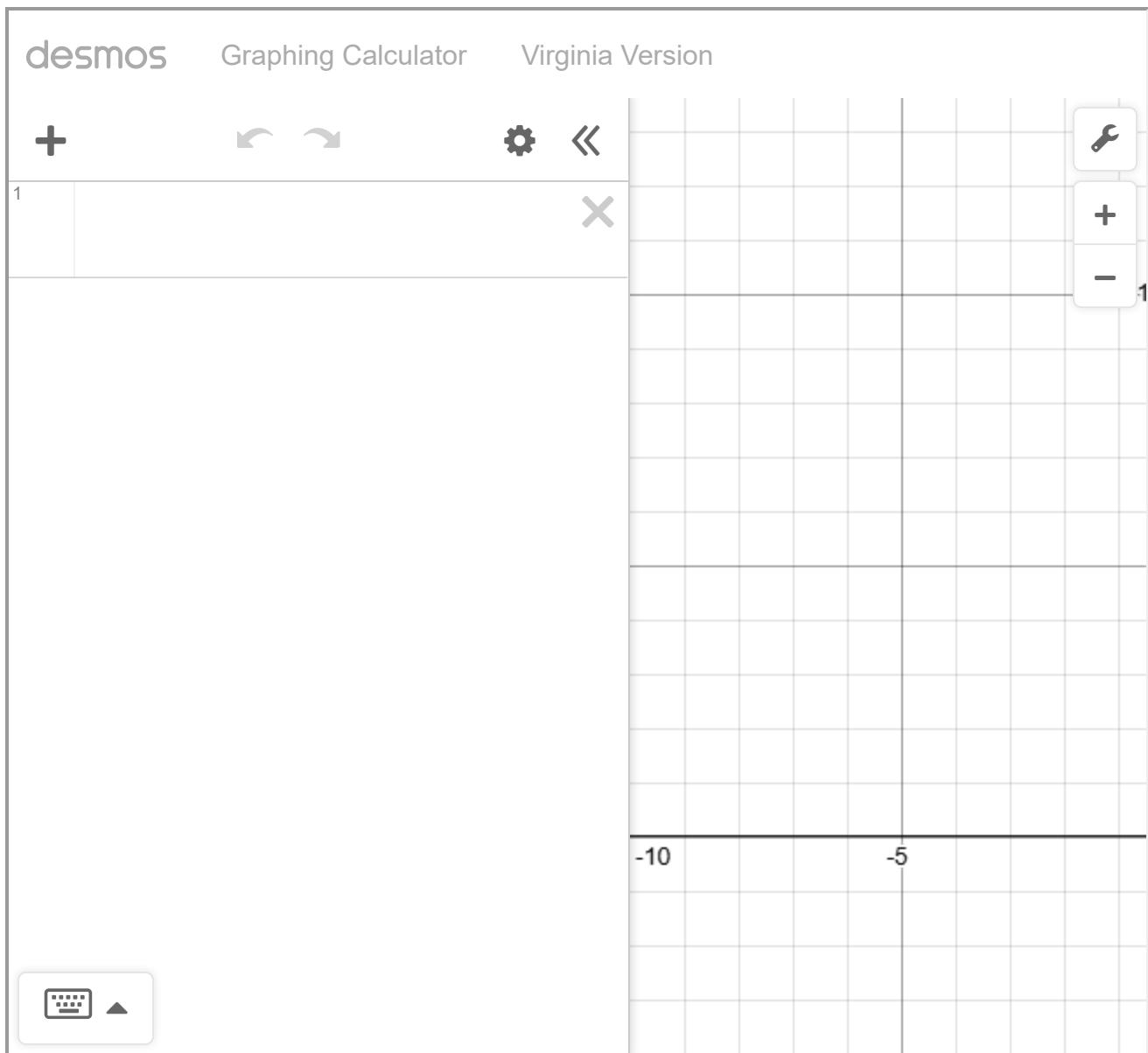


**Name:****Class:****Date:**

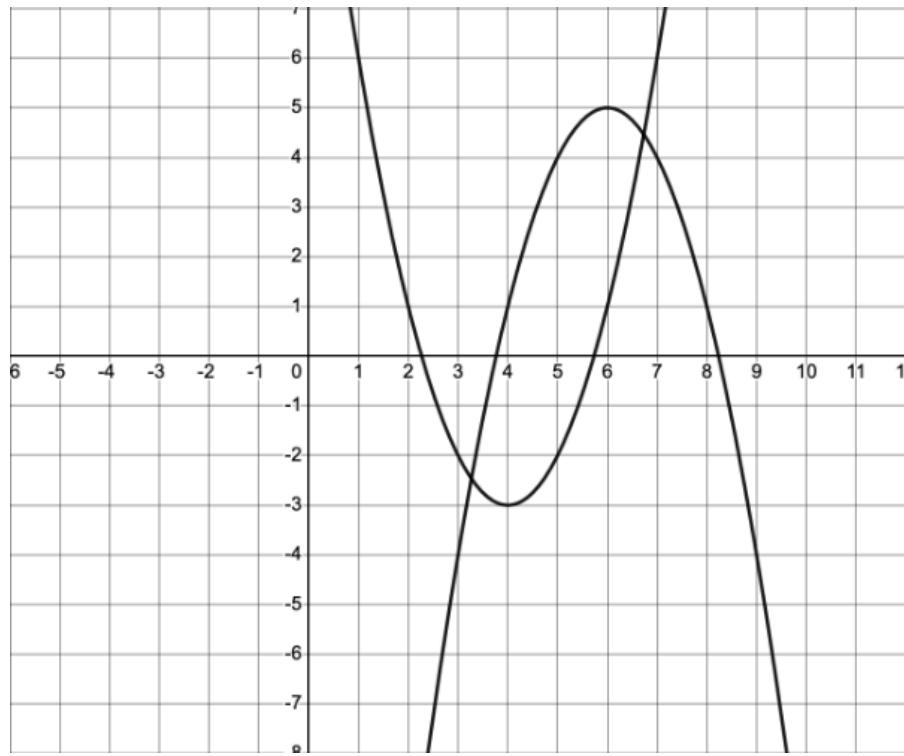
**Question #1****Directions: Select all the zeros of this function.****What are the zeros of this function?**

$$f(x) = 2x^2 + 7x - 15$$

$\frac{3}{2}$	-30	-7
2	$\frac{5}{2}$	-5

Question #2

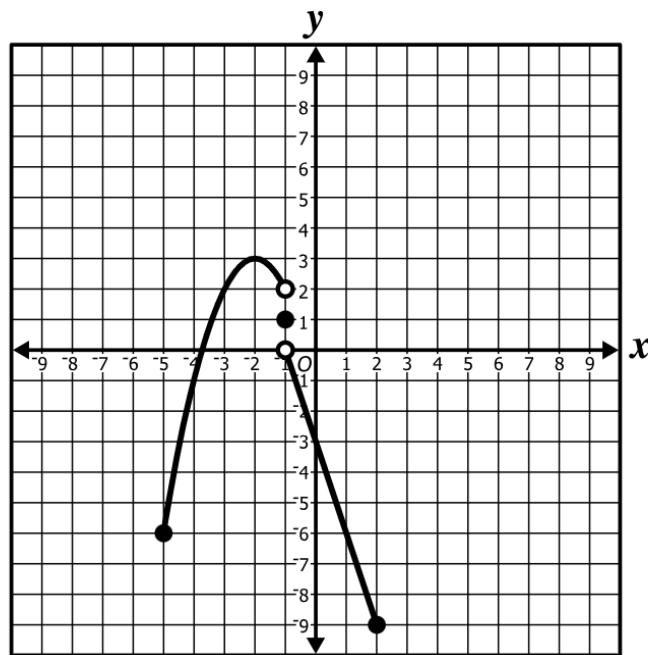
The figure shows the graph of a system of equations. How many real solutions does the system have?



- A **A** 0  
B **B** 2  
C **C** 4  
D **D** 8

**Question #3**

The graph of a function is shown on a grid.



What appears to be the domain of this function?

- A **A**  $\{x \mid -9 \leq x \leq 3\}$
- B **B**  $\{x \mid -5 \leq x \leq 2\}$
- C **C**  $\{x \mid -5 \leq x \leq -1 \text{ and } -1 < x < 2\}$
- D **D**  $\{x \mid -9 \leq x \leq 0 \text{ and } 2 < x \leq 3\}$

**Question #4**

**How does  $y = \sqrt{x} - 1$  affect the parent function  $y = \sqrt{x}$ ?**

- A A It shifts the parent function left 1 unit.
- B B It shifts the parent function right 1 unit.
- C C It shifts the parent function up 1 unit.
- D D It shifts the parent function down 1 unit.

**Question #5**

**Completely factor the following:**

$$2x^2 - 6xy - 56y^2$$

- A  $2(x - 7y)(x + 4y)$
- B  $2(x + 7y)(x - 4y)$
- C  $(2x + 7y)(2x - 4y)$
- D  $(2x - 7y)(2x + 4y)$

**Question #6**

**When factored completely,  $30x^2 - 19x - 5$  is equal to -**

- A  $5(6x^2 - 19x - 1)$
- B  $(5x - 1)(6x + 5)$
- C  $(5x + 1)(6x + 5)$
- D  $(5x + 1)(6x - 5)$

**Question #7****Solve for x:**  $4x^2 + 3 = 0$ .

A  $x = \pm \frac{\sqrt{3}}{4}$

B  $x = \pm \frac{\sqrt{3}}{2}i$

C  $x = \pm \frac{\sqrt{3}}{2}$

D  $x = \pm \frac{\sqrt{3}}{4}i$

**Question #8****Solve**  $4x^2 + 4x - 3 \leq 0$ .

A  $(-\infty, \infty)$

B  $[-\frac{3}{2}, \frac{1}{2}]$

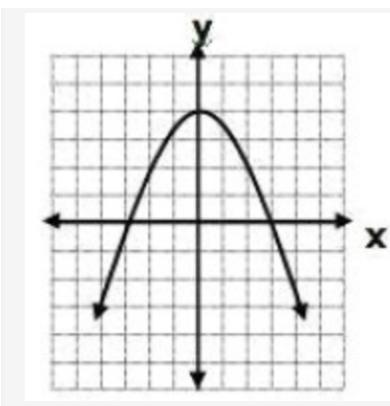
C  $(-\infty, -\frac{3}{2}] \cup [\frac{1}{2}, \infty)$

D  $[-3, 2]$

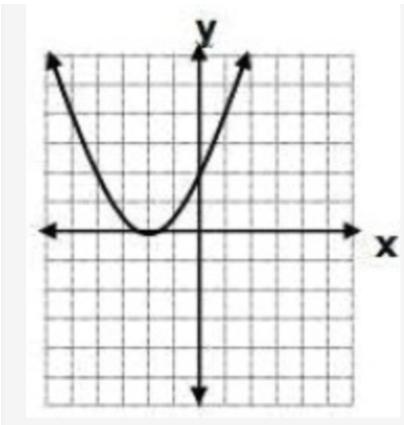
**Question #9**

**Which graph has only imaginary (complex) solutions?**

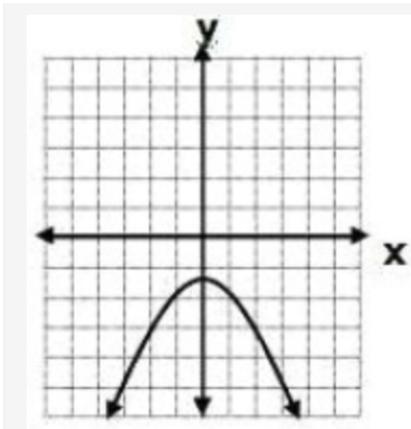
A



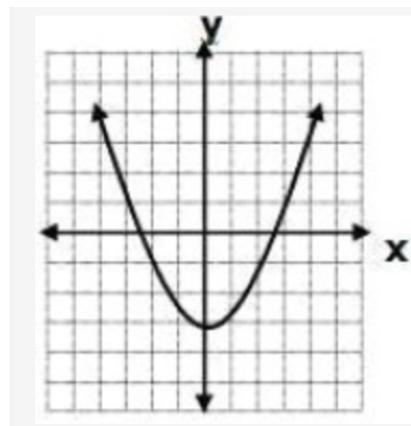
B



C



D



**Question #10**

What is the solution set for the equation  $x^2 - 6x + 4 = 0$ ?

A  $\{-3 \pm \sqrt{5}\}$

B  $\{3 \pm \sqrt{5}\}$

C  $\{-3 \pm 2\sqrt{5}\}$

D  $\{3 \pm 2\sqrt{5}\}$

**Question #11**

Solve the inequality  $x^2 - 5x + 7 < 1$ .

A  $x = 2$  and  $x = 3$

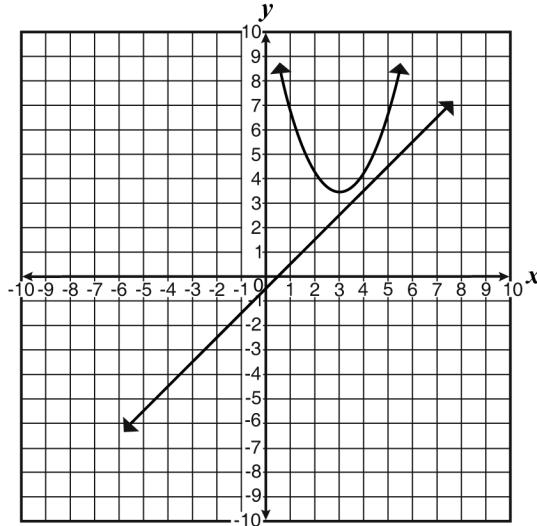
B  $x < 2$  or  $x > 3$

C  $2 < x < 3$

D  $x < -3$

Question #12

The graphs of a quadratic and linear equation are shown in the coordinate plane.



Which statement *best* describes the solutions to this system?

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

Question #13

The graphs of  $y = -2x - 3$  and  $y = -2x^2 - 5x + 2$  are drawn on a coordinate plane. For which values of  $y$  do these graphs intersect? Drag and drop the  $y$ -coordinates of these solutions to correctly complete the statement below.

The graphs of the given equations intersect when  $y =$   (a negative number)

and when  $y =$   (a positive number).

-8	-6	-5	-2.5	-1	1	2	2.5
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Question #14

Use the integers below to create an ordered pair of one of the solutions to the system of equations.

$$\begin{cases} x - y = 2 \\ x^2 + x - 6 = y \end{cases}$$

( ,  )

- 8     0     -2     12     6     -4

Question #15

Simplify:  $\sqrt{-25} - 3\sqrt{-36}$

- A  $-13i$   
B  $23i$   
C  $5 + 18i$   
D  $13i$

Question #16

Simplify:  $(8 + 2i) - (6 + 3i)$

- A  $2 + 5i$   
B  $14 + 5i$   
C  $14 - i$   
D  $2 - i$

**Question #17**

What is the product of  $(4 + 3i)$  and  $(12 - 2i)$ ?

- A  $54 + 28i$
- B  $54 - 28i$
- C  $42 + 28i$
- D  $42 - 28i$

**Question #18**

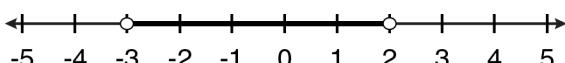
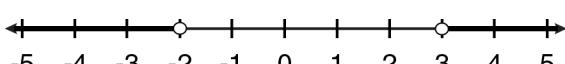
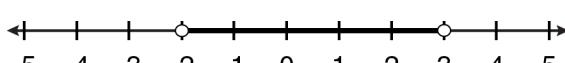
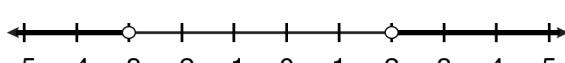
If the average internal body temperature for an animal is  $92.5^{\circ}\text{F}$  and it can vary by as much as  $0.6^{\circ}\text{F}$ . Which of the following absolute value equation's solutions represent the lowest and highest normal temperatures?

- A  $|x + 0.6| = 92.5$
- B  $|x + 92.5| = 0.6$
- C  $|x - 92.5| = 0.6$
- D  $|x - 0.6| = 92.5$

**Question #19**

Which number line shows the solution to the inequality below?

$$|2x + 1| < 5$$

- A 
- B 
- C 
- D 

## Question #20

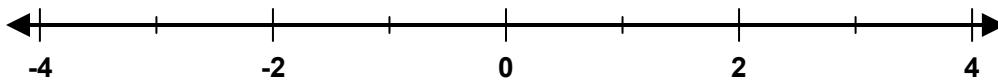
Which of the following x values will make this inequality  $3|4x + 5| \geq 24$  true?

	True	False
-7	<input type="radio"/>	<input type="radio"/>
0	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>
-2	<input type="radio"/>	<input type="radio"/>

### Question #21

**What is the solution to the inequality  $5|x - 2| + 1 \leq 6$ ?**

A horizontal row of ten white rectangular boxes, each containing a black icon. From left to right, the icons are: a single dot, a double horizontal bar with two dots at its ends, a horizontal bar with a dot at each end, a horizontal bar with a dot in the middle, a horizontal bar with two open circles at its ends, a horizontal bar with a dot at one end and a double-headed arrow at the other, a horizontal bar with a dot in the middle and a double-headed arrow at both ends, a horizontal bar with two open circles at its ends and a double-headed arrow at both ends, and a horizontal bar with two open circles at its ends and a double-headed arrow in the middle.



## Question #22

**Solve:**  $|2x + 3| - 6 = 7$

- A  $x = 8$  and  $x = -5$
  - B  $x = 5$  and  $x = -2$
  - C  $x = 8$  and  $x = 5$
  - D  $x = -8$  and  $x = 5$