2015 SOL Quiz B Questions 1-20

____1. Which expression represents five less than a third of a number, n?

A. $5-\frac{1}{3}n$ B. $\frac{1}{3}n-5$ C. $\frac{1}{3}(5-n)$ D. $\frac{1}{3}(n-5)$

____2. Which of the following binomials is a factor of $x^2 - x - 20$?

A. $x - 2$ B. $x - 3$ C. $x - 4$ D. $x - 5$

____3. Consider the expressions below and determine which are in simplest radical form?

I. $6x^2\sqrt{5xy}$ II. $x^2\sqrt{8xy}$ III. $x\sqrt{5x^5}$ IV. $100\sqrt{7}$

A. I and II
B. I and IV
C. II and III
D. II and IV

____4. Which expression is equivalent to $\frac{1}{6}(36x-12y)-\frac{1}{4}(8x-20y)$?

A. $4x + 3y$ B. $4x - 7y$ C. $2x - 7y$ D. $5x - 7y$

____5. Which is equivalent to $\sqrt[3]{40}$?

A. $4\sqrt[3]{2}$ B. $5\sqrt[3]{2}$ C. $2\sqrt[3]{2}$ D. $2\sqrt[3]{5}$

____6. What is the value of $\sqrt{32}$ in simplest radical form?

A. $4\sqrt{2}$ B. $3\sqrt{2}$ C. $6\sqrt{2}$ D. $8\sqrt{2}$

____7. Which polynomial is equivalent to this expression if $n \neq 2$?

$$\frac{14-3n-2n^2}{2-n}$$

A. $7 - n$ B. $7 - 2n$ C. $7 + 2n$ D. $7 - 2n^2$

____8. Which is a factor of $6n^2 - n - 1$?

A. 3n – 1 B. 3n + 1 C. 2n + 1 D. 2n + 2

____9. Which of the following is equivalent to $\frac{a^{10}b^6}{a^7b^5}$?

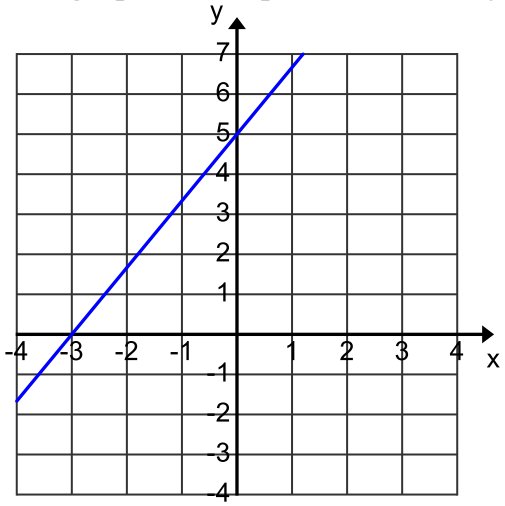
A. $\frac{a^3}{b}$ B. $\frac{b}{a^3}$ C. a^3b D. ab^3

____10. What is the value of this expression when n = -4 ? $-2|n+6|$

A. -20 B. 20 C. 4 D. -4

____11. Which graph best represents 5x + 3y = 15?

A.



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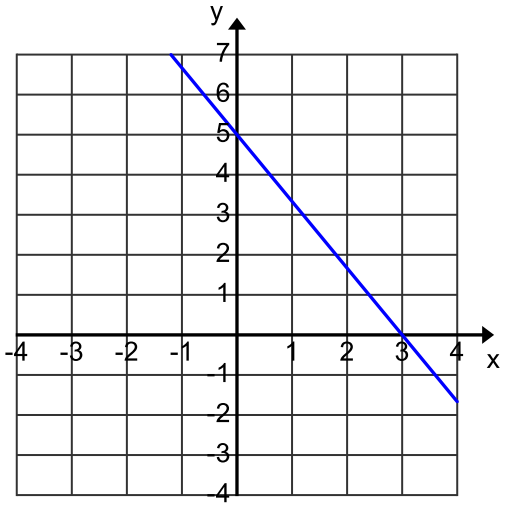

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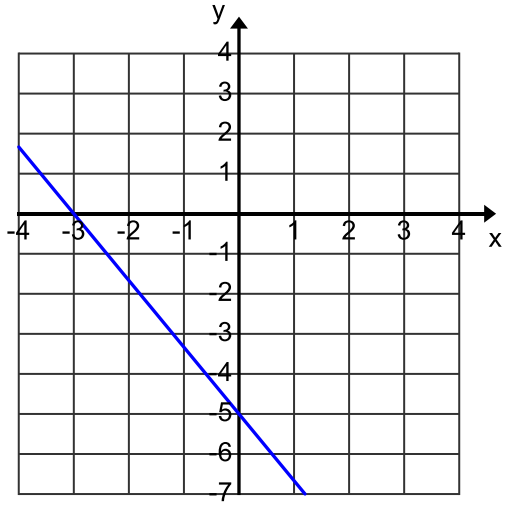

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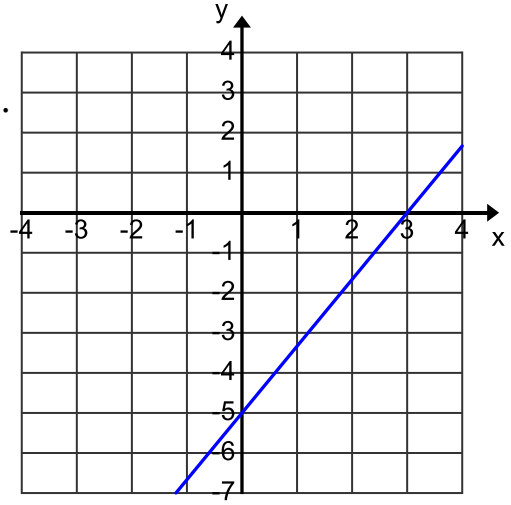


____12. A formula is given below. Which equation can be used to find x?

$$200 = 2x + y$$

A. $x = \frac{200 - y}{2}$

B. $x = \frac{200 + y}{2}$

C. $x = 100 - y$

D. $x = 100 + y$

____13. Which equation represents the line that passes through the points (-1, -8) and (1, -2)?

A. $y = 3x - 8$

B. $y = -3x - 8$

C. $y = 3x - 5$

D. $y = 3x + 5$

____14. For which system of inequalities is (-2, 1) a solution?

A. $\begin{cases} x + y \geq -1 \\ x - y \geq -2 \end{cases}$

B. $\begin{cases} x + y \geq -1 \\ x - y \leq -2 \end{cases}$

C. $\begin{cases} x + y < -1 \\ x - y \geq -3 \end{cases}$

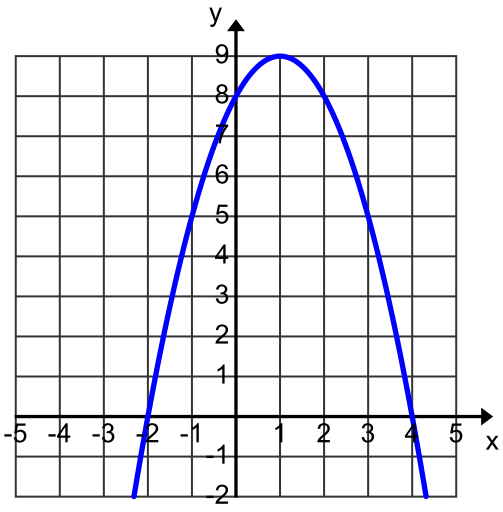
D. $\begin{cases} x + y > -1 \\ x - y \leq -2 \end{cases}$

____15. What is the solution to this system of equations? $\begin{cases} 3x + 6y = 0 \\ 5x + y = -9 \end{cases}$

A. (-4, 2) B. (0, 0) C. (-2, 1) D. (4, -2)

____16. The graph of $y = -x^2 + 2x - 8$ is shown.

Identify each of the solutions to $-x^2 + 2x - 8 = 0$.

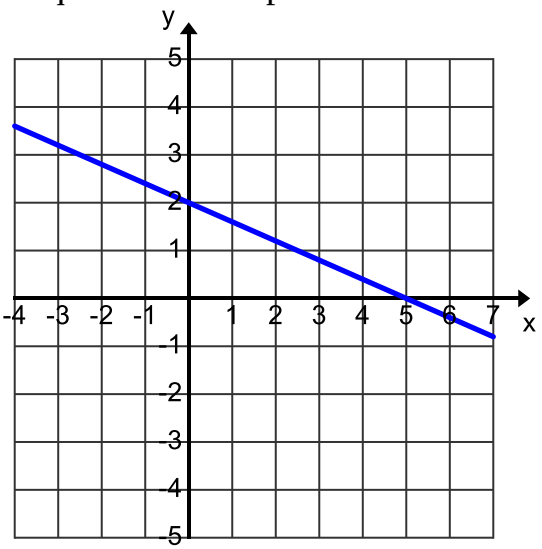


A. x = -2, 4 B. x = -4, 2 C. x = 9 D. x = 0

____17. What value of x makes the equation to the right true? $3x + 14 = -4x$

A. 4 B. 2 C. -4 D. -2

____18. Which equation best represents line below?



A. y = 2x + 5 B. y = -2x + 5

C. $y = \frac{2}{5}x + 2$ D. $y = -\frac{2}{5}x + 2$

____19. Joe incorrectly solved an inequality as shown.

Step 1: $-2(x - 4) > 10$
Step 2: $-2x - 8 > 10$
Step 3: $-2x > 18$
Step 4: $x < -9$

Between which two consecutive steps did Joe make a mistake?

A. Step 1 to Step 2
B. Step 2 to Step 3
C. Step 3 to Step 4
D. There are no mistakes

____20. Solve for n:

$$\frac{2n-4}{2} = \frac{4n-1}{5}$$

A. n = 8
B. n = 9
C. n = 11
D. n = 12