

Algebra 1 Test 8 Review
Factoring/Quadratics

Name _____

Date _____

Factor each polynomial Completely. If the polynomial cannot be factored, state that it is prime.

1 $5x + 10$

2 $x^2 - 64$

3 $x^2 + 100$

4 $14x^3 - 7x^2$

5 $x^2 - x - 12$

6 $3x^2 + 13x - 10$

7 Identify ALL of the factors of $8x^2 - 18$ when it is completely factored.

x	2	$(2x - 3)$	$(2x - 9)$
$(2x + 3)$	$(x + 2)$	$8x^2$	$(4x^2 - 9)$

8 Which is a factor of $25x^2 - 1$?

- A $5x^2$
- B $(25x - 1)$
- C $(5x + 1)$
- D $(5x^2 - 25)$

9 Factor Completely. $5m^2 + 20m$

- A $5(m^2 + 4)$
- B $5m(m + 4)$
- C $5m^2(m + 4)$
- D $20(m^2 + m)$

10 What is the complete factorization of $m^2 - n^2$?

- A $(m - n)^2$
- B $(m + n)^2$
- C $(m + n)(m - n)$
- D $2(m + n)$

11 Which is the complete factorization of $x^2 + 10x + 9$?

- A $(x - 9)(x + 1)$
- B $(x + 9)(x - 1)$
- C $(x - 9)(x - 1)$
- D $(x + 9)(x + 1)$

12 Which is a factor of $x^2 - 2x - 3$?

- A $(x - 3)$
- B $(x + 3)$
- C $(x - 1)$
- D $(3x - 1)$

13 Which is the complete factorization of $2x^2 + 5x - 3$?

- A $(x + 3)(2x - 1)$
- B $(x - 3)(2x + 1)$
- C $(x - 3)(2x - 1)$
- D $(x + 1)(2x + 3)$

14 Which is a factor of $3x^2 - 4x - 7$?

- A $(x - 1)$
- B $(3x + 7)$
- C $(x + 1)$
- D $(x - 7)$

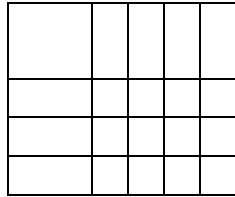
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$\square = x^2$

$\text{rectangle} = x$

$\text{small square} = 1$

Based on the models for x^2 , x , and 1 , which factors are represented in the diagram?



- A $(x + 3)(x - 4)$
- B $(x + 12)(x + 1)$
- C $(x + 2)(x + 6)$
- D $(x + 4)(x + 3)$

16 Simplify

$$(5x^2 - 13x - 6) \div (5x + 2)$$

- A $(2x + 5)$
- B $(x + 3)$
- C $(x - 3)$
- D $(x - 6)$

17 Simplify the following expression. Assume the denominator does not equal zero.

$$\frac{x^2 + 4x - 45}{x + 9}$$

- A $x - 9$
- B $x + 9$
- C $x + 5$
- D $x - 5$

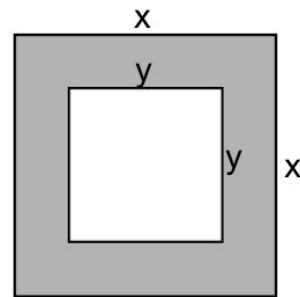
18 Which polynomial cannot be factored over a set of real numbers?

- A $x^2 - 25$
- B $x^2 + 25$
- C $5x - 25$
- D $x^2 - 10x + 25$

19 A rectangle has an area of $2x^2 + 5x - 7$ square feet. If the width of the room is $(x - 1)$ feet, what is the length?

- A $2x + 7$
- B $2x - 7$
- C $x + 1$
- D $x + 7$

20 The diagram below shows two squares.



a.) What is the area of the white square?

b.) What is the area of the larger square?

c.) What is the area of the grey shaded region? How is this area expressed in factored form?

21 Which is the solution set for the equation $x^2 + 6x + 8 = 0$?

- A $\{-4, -2\}$
- B $\{-4, 2\}$
- C $\{-2, 4\}$
- D $\{2, 4\}$

22 Which is the solution set for the equation $r^2 - 9 = 0$?

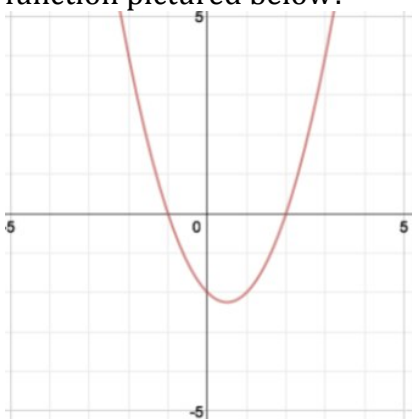
23 What are the x-intercepts to $y = x^2 + 3x - 10$?

- A $(-5, 0)$ & $(-2, 0)$
- B $(2, 0)$ & $(5, 0)$
- C $(-2, 0)$ & $(5, 0)$
- D $(-5, 0)$ & $(2, 0)$

24 To the nearest tenth, what are the solutions of the quadratic equation $x^2 + 2x - 10 = 0$?

- A 5 and -2
- B -4.3 and 2.3
- C 4.3 and -2.3
- D 10.5 and 0

25 What are the zeros of the quadratic function pictured below?

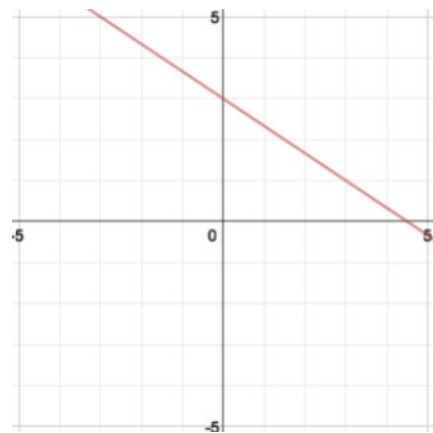


26 What is the slope of the line passing through the points $(2, 3)$ & $(-1, -3)$?

- A 1
- B 3
- C 0
- D Undefined

27 Simplify $(5x^3)^2$

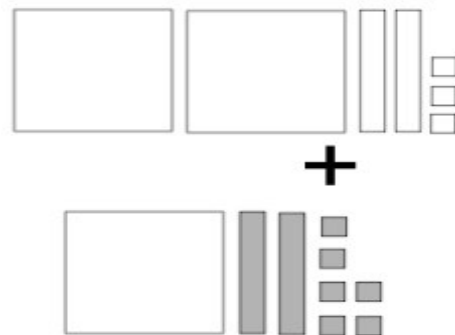
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What is the slope of the line graphed above?

- A $-\frac{3}{2}$
- B $\frac{3}{2}$
- C $-\frac{2}{3}$
- D $\frac{2}{3}$

29 What polynomial is represented by the following?



30 Which equation has a slope of 2, and passes through (1, 6)

- A $y = 2x - 4$
- B $y = 2x + 4$
- C $y = -2x + 4$
- D $y = -2x - 4$

35 Solve $3r > 7r + 16$

31 Which equation is a line that passes through (-3, 8) and (4, 1)?

- A $y = -x + 5$
- B $y = -x - 7$
- C $y = 3x + 9$
- D $y = -5x + 1$

32 How many solutions exist to the following system of equations?

$$\begin{cases} x + y = 3 \\ -x + y = -5 \end{cases}$$

- A One Solution
- B No Solution
- C Many Solutions
- D None of the above

33 Simplify $(m - 8)^2$

- A $m^2 - 64$
- B $m^2 - 16m + 16$
- C $m^2 - 8m + 16$
- D $m^2 - 16m + 64$

34 Solve $3(x + 4) = 6(x - 5)$

- A $x = 6$
- B $x = -6$
- C $x = 14$
- D $x = 8$