

Name: _____
 College Algebra Mr. Schwartz

1. Identify the terms in the following expression:

$$5x^4y^6 - 9(x - y) - 7xz$$

Answer:

$$5x^4y^6$$

$$-9(x - y)$$

$$-7xz$$

2. Identify the coefficients in the following expression:

$$-7x^3y^3 + 6(x - y) - 8xz$$

Answer:

$$-7$$

$$6$$

$$-8$$

3. Identify the coefficients in the following expression:

$$5\sqrt{z - 5x} - \frac{7}{6}y$$

Answer:

$$5$$

$$-\frac{7}{6}$$

4. Identify the coefficients in the following expression:

$$-\frac{5x}{3yz} - 6x^5 - 6.4y$$

Answer:

$$-\frac{5}{3}$$

$$-6$$

$$-6.4$$

5. Identify the terms in the following expression:

$$-\frac{3x}{8yz} - 2x^9 + 2.4y$$

Answer:

$$-\frac{3x}{8yz}$$

$$-2x^9$$

$$2.4y$$

6. Identify the factors in the following expression:

$$-7x^8y^2$$

Answer:

$$-7$$

$$x^8$$

$$y^2$$

7. Identify the factors in the following expression:

$$-5\sqrt{z-6x}$$

Answer:

$$-5$$

$$\sqrt{z-6x}$$

8. Evaluate the following expression for the given values of the variables: (Leave your answer in terms of π or use $\pi = 3.14$.)

$$3x^3 - 3\pi y - y^3 \text{ for } x = -1 \text{ and } y = -3$$

Answer:

$$24 + 9\pi$$

9. Evaluate the following expression for the given values of the variables:

$$|x - 2y| + (3z - 4) \text{ for } x = -1, y = 4 \text{ and } z = 1$$

Answer:

$$8$$

10. Evaluate the following expression for the given values of the variables, expressing your answer in fraction form if needed.

$$\frac{x^2y^3}{-8z} + \frac{|xy|}{-8z} \text{ for } x = -2, y = -1 \text{ and } z = 5$$

Answer:

1
20

11. Evaluate the following expression for the given values of the variables:

$$-3\sqrt{x-2} + 2y^3 \text{ for } x = 38 \text{ and } y = -1$$

Answer:

-20

12. Identify the property that justifies the following statement:

$$(-7 - 4)(-3^7) = (-3^7)(-7 - 4)$$

A) **Commutative Property of Multiplication**

B) Associative Property of Multiplication

C) Commutative Property of Addition

D) Associative Property of Addition

E) Distributive Property

F) Multiplicative Identity

G) Multiplicative Inverse

H) Additive Inverse

I) Additive Identity

13. Identify the property that justifies the following statement:

$$-5x - 6 = -6 - 5x$$

A) Commutative Property of Multiplication

B) Associative Property of Multiplication

C) **Commutative Property of Addition**

D) Associative Property of Addition

E) Distributive Property

F) Multiplicative Identity

G) Multiplicative Inverse

H) Additive Inverse

I) Additive Identity

14. Identify the property that justifies the following statement:

$$(x + 6) + 4y = x + (6 + 4y)$$

A) Commutative Property of Multiplication

B) Associative Property of Multiplication

C) Commutative Property of Addition

D) **Associative Property of Addition**

E) Distributive Property

F) Multiplicative Identity

G) Multiplicative Inverse

H) Additive Inverse

I) Additive Identity

15. Identify the property that justifies the following statement:

$$-3(-9x^5y^8z) = (-3)(-9)(x^5y^8z)$$

- | | |
|--|----------------------------|
| A) Commutative Property of Multiplication | F) Multiplicative Identity |
| B) Associative Property of Multiplication | G) Multiplicative Inverse |
| C) Commutative Property of Addition | H) Additive Inverse |
| D) Associative Property of Addition | I) Additive Identity |
| E) Distributive Property | |

16. Identify the property that justifies the following statement:

$$-6(3y - 7) = -18y + 42$$

- | | |
|---|----------------------------|
| A) Commutative Property of Multiplication | F) Multiplicative Identity |
| B) Associative Property of Multiplication | G) Multiplicative Inverse |
| C) Commutative Property of Addition | H) Additive Inverse |
| D) Associative Property of Addition | I) Additive Identity |
| E) Distributive Property | |

17. Identify the property that justifies the following statement:

$$\frac{-7}{3}x^4y + \left(\frac{7}{3}x^4y\right) = 0$$

- | | |
|---|----------------------------|
| A) Commutative Property of Multiplication | F) Multiplicative Identity |
| B) Associative Property of Multiplication | G) Multiplicative Inverse |
| C) Commutative Property of Addition | H) Additive Inverse |
| D) Associative Property of Addition | I) Additive Identity |
| E) Distributive Property | |

18. Identify the property that justifies the following statement:

$$(-2x + 3)\left(\frac{1}{-2x + 3}\right) = 1$$

- | | |
|---|----------------------------------|
| A) Commutative Property of Multiplication | F) Multiplicative Identity |
| B) Associative Property of Multiplication | G) Multiplicative Inverse |
| C) Commutative Property of Addition | H) Additive Inverse |
| D) Associative Property of Addition | I) Additive Identity |
| E) Distributive Property | |

19. If the following statement is false, choose **False Statement**. Otherwise, identify the property that justifies it. If one of the cancellation properties is being used to transform the equation, identify the quantity that is added to or multiplied by both sides.

$$28x^4 = -56y^2z \Leftrightarrow 4x^4 = -8y^2z$$

A) **Multiplicative Cancellation Property**

(Quantity:

$$\frac{1}{7}$$

)

B) Additive Cancellation Property

C) Zero Factor Property

D) False Statement

20. If the following statement is false, choose **False Statement**. Otherwise, identify the property that justifies it. If one of the cancellation properties is being used to transform the equation, identify the quantity that is added to or multiplied by both sides.

$$4x + 11y^8 - z = 5y^8 - z \Leftrightarrow 4x + 6y^8 = 0$$

A) Multiplicative Cancellation Property

B) **Additive Cancellation Property**

(Quantity:

$$-5y^8 + z$$

)

C) Zero Factor Property

D) False Statement

21. If the following statement is false, choose **False Statement**. Otherwise, identify the property that justifies it. If one of the cancellation properties is being used to transform the equation, identify the quantity that is added to or multiplied by both sides.

$$(-3 + 9x)(y - 2x) = 0 \Rightarrow (-3 + 9x) = 0 \text{ or } (y - 2x) = 0$$

A) Multiplicative Cancellation Property

B) Additive Cancellation Property

C) **Zero Factor Property**

D) False Statement

22. If the following statement is false, choose **False Statement**. Otherwise, identify the property that justifies it. If one of the cancellation properties is being used to transform the equation, identify the quantity that is added to or multiplied by both sides.

$$\frac{1}{7}x^8y = \frac{-1}{3}(y+z) \Leftrightarrow \frac{9}{2}x^8y = \frac{-1}{2}(y+z)$$

- A) Multiplicative Cancellation Property
 B) Additive Cancellation Property
 C) Zero Factor Property
 D) **False Statement**

23. Evaluate the following expression, expressing your answer in fraction form if needed. Be sure to use the correct order of operations.

$$4 - 2 \cdot -1 \div 5 + (-5)^3$$

Answer:

-603
5

24. Evaluate the following expression, expressing your answer in terms of π . Be sure to use the correct order of operations.

$$-3^2 + 2 \cdot \sqrt{7+9} \cdot 2 - 6\pi$$

Answer:

$1 - 6\pi$

25. Evaluate the following expression, expressing your answer in fraction form if needed. Be sure to use the correct order of operations.

$$5 \div 7 + 3\sqrt{3^2} - (3 \cdot 2)$$

Answer:

152
7

26. Evaluate the following expression, expressing your answer in fraction form if needed. Be sure to use the correct order of operations.

$$\frac{-2 - 3 \cdot 1 - 4}{-7(-3 - 1 \div (-9 + 7))}$$

Answer:

-18
35

27. Simplify the following union and / or intersection of intervals:

$$(-10, -1] \cup [-9, 5)$$

Answer:

$$(-10, 5)$$

28. Simplify the following union and / or intersection of intervals:

$$[-16, -7] \cup (-7, \infty)$$

Answer:

$$[-16, \infty)$$

29. Simplify the following union and / or intersection of intervals:

$$[-9, -2) \cap (-2, 10)$$

Answer:

$$\emptyset$$

30. Simplify the following union and / or intersection of intervals:

$$(14.6, 15.1) \cap \mathbb{Z}$$

Answer:

$$\{15\}$$

31. Simplify the following union and / or intersection of intervals:

$$(-10, -1] \cap [-9, 5)$$

Answer:

$$[-9, -1]$$

32. Simplify the following union and / or intersection of intervals:

$$(-\infty, -9] \cap [-9, 4)$$

Answer:

$$\{-9\}$$

33. Simplify the following union and / or intersection of intervals:

$$(-5, 10) \cap [2, 7) \cap (1, 3]$$

Answer:

$$[2, 3]$$

34. Simplify the following union and / or intersection of intervals:

$$\mathbb{R} \cup \mathbb{Q}$$

Answer:

$$\mathbb{R}$$

35. Simplify the following union and / or intersection of intervals:

$$\mathbb{R} \cap \mathbb{Z}$$

Answer:

$$\mathbb{Z}$$