

Algebra I EOC Practice #3

SPI 3102.1.3 Apply properties to evaluate expressions, simplify expressions, and justify solutions to problems.

1. Simplify: $3(x - 2y) + 7(x + 3y) - 3y$

- A. $4x - 30y$
- B. $10x + 12y$
- C. $-6x + 12y$
- D. $7x - 10y$

2. Simplify: $-4(2x - 3y) + 4x - 2(x + 6)$

- A. $-6x$
- B. $-6x + 24y$
- C. $12y - 12$
- D. $-6x + 12y - 12$

3. If $x = -2$, $y = 5$, and $z = 3$, evaluate the following expression.

$$x^4 - 5y + 2(x - z)^2$$

- A. 50
- B. -41
- C. 41
- D. 63

4. Simplify: $5x^6(2x^4 - x^3 + 7x^2 - 4x)$

- A. $10x^{10} - 5x^9 + 35x^8 - 20x^7$
- B. $10x^{24} - 5x^{18} + 35x^{12} - 20x^6$
- C. $7x^{24} - 4x^{18} + 12x^{12} + x^6$
- D. $20x^{34}$

5. If $x = -4$ and $y = 8$, evaluate the following expression.

$$\frac{x^2}{2} + 3y^3$$

- A. 1544
- B. -1500
- C. -200
- D. 1540

6. Identify the property used to simplify the following expression.

$$3(x - 7) = 3x - 21$$

- A. Associative Property of Addition
- B. Commutative Property of Addition
- C. Distributive Property
- D. Identity Property of Addition

7. What is the value of the expression when $x = 6$ and $y = -4$?

$$8xy^2 - 5x^2$$

- A. -948
- B. 588
- C. 324
- D. 36,864

8. David wants to buy a new bicycle that cost \$295 before a 40% discount. He finds the cost after the discount, in dollars, by evaluating $295 - 295(0.40)$. His brother Michael finds the same cost by evaluating $295(1 - 0.40)$. What property can be used to justify that these two expressions represent the same cost after the discount?

- A. associative property
- B. commutative property
- C. distributive property
- D. subtraction property of equality