

1. Simplify the expression by combining like terms.

$$3xy^2 + 4y^2 - 5xy^2 + 12y^2$$

1. _____

(a) $-2xy^2 + 8y^2$ (b) $-xy^2 + 15y^2$ (c) $7xy^2 + 7y^2$ (d) $-2xy^2 + 16y^2$

2. Simplify the expression by combining like terms.

$$(-5x^4 + x^3 - 7x - 6) - (-7x^3 + 5x^2 - 11)$$

2. _____

(a) $2x^4 + x^3 - 5x^2 - 7x + 5$ (b) $-5x^4 + 7x^3 + 6x^2 - 7x - 17$
(c) $-5x^4 + 8x^3 + 5x^2 - 7x - 17$ (d) $-5x^4 + 8x^3 - 5x^2 - 7x + 5$

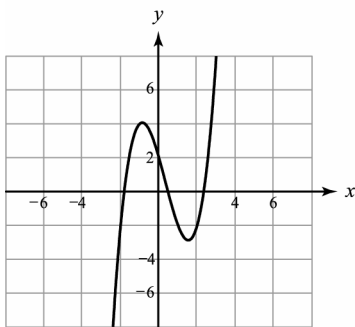
3. Evaluate
- $f(x) = -2x^2 + 5x - 7$
- at
- $x = -3$
- .

3. _____

(a) 14 (b) -40 (c) -4 (d) -10

4. Use the graph to evaluate
- $f(2)$
- .

4. _____



(a) -2 (b) 0 (c) -1 (d) -3

5. Multiply and simplify
- $\frac{3}{4}x(8x^2 - 16)$
- .

5. _____

(a) $6x^3 - 16$ (b) $6x^2 - 4x$ (c) $6x^3 - 12x$ (d) $6x^2 - 12$

6. Multiply and simplify
- $2xy^2 \cdot 7x^4y^2$
- .

6. _____

(a) $14x^4y^2$ (b) $9x^4y^2$ (c) $9x^4y^4$ (d) $14x^5y^4$

7. Multiply and simplify $(2x-7)^2$. 7. _____

- (a) $4x^2 + 49$ (b) $4x^2 - 28x + 49$ (c) $4x^2 - 49$ (d) $4x^2 - 14x + 49$

8. Multiply and simplify $(2x+3)(4x^2-6x+9)$. 8. _____

- (a) $16x^4 - 81$ (b) $16x^4 + 81$ (c) $8x^3 - 27$ (d) $8x^3 + 27$

9. Factor completely $2x^2 + 9x - 35$. 9. _____

- (a) $(2x+5)(x-7)$ (b) $(2x-5)(x+7)$
(c) $(2x+7)(x-5)$ (d) $(2x-7)(x+5)$

10. Factor completely $2x^4 - 8x^2$. 10. _____

- (a) Cannot be factored. (b) $(2x^2 + 2)(x^2 - 4)$
(c) $2x^2(x-8)$ (d) $2x^2(x+2)(x-2)$

11. Factor completely $3x^3 + x^2 + 12x + 4$. 11. _____

- (a) $(3x+1)(x+2)^2$ (b) Cannot be factored.
(c) $(3x+1)(x^2+4)$ (d) $(x+1)(3x^2+4)$

12. Factor completely $9x^2 - 24x + 16$. 12. _____

- (a) $(3x+2)(3x-8)$ (b) $(3x-4)^2$
(c) Cannot be factored. (d) $(3x+4)(3x-4)$

13. Factor completely $27x^3 - 64y^3$. 13. _____

- (a) $(3x - 4y)(9x^2 - 24xy + 16y^2)$ (b) $(3x - 4y)^3$
 (c) $(3x - 4y)(9x^2 + 12xy + 16y^2)$ (d) Cannot be factored.

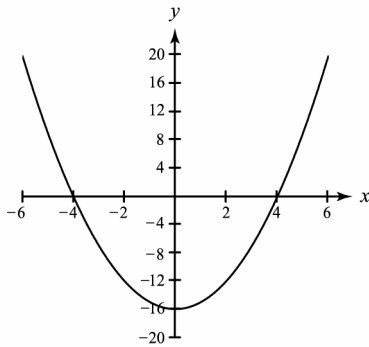
14. Identify the degree and leading coefficient of the monomial $-4x^3 + 6x^2 - 7$. 14. _____

- (a) degree = 3 (b) degree = 5 (c) degree = 3 (d) degree = 5
 ldg coeff = -4 ldg coeff = -7 ldg coeff = -7 ldg coeff = -4

15. Multiply $(3x^2 + 4y)^2$. 15. _____

- (a) $9x^2 + 16y^2$ (b) $9x^4 + 16y^2$
 (c) $9x^4 + 24x^2y + 16y^2$ (d) $9x^4 + 12x^2y + 16y^2$

16. Use the graph to factor $x^2 - 16$. 16. _____



- (a) $(x + 8)(x - 8)$ (b) $(x - 4)^2$
 (c) $(x + 4)(x - 4)$ (d) Cannot be factored.

17. Write a polynomial that represents the product of three consecutive odd integers, where x is the smallest integer. 17. _____

- (a) $x(x + 2)(x + 4)$ (b) $x(x + 1)(x + 3)$
 (c) $3x(x + 1)(x + 2)$ (d) $x(x + 1)(x + 2)$

18. Use factoring to solve the polynomial equation $4x^2 - 16x = 0$. 18. _____

- (a) 0, 4 (b) -2, 2, 4 (c) 4, 16 (d) -2, 0, 2

19. Use factoring to solve the polynomial equation $2x^2 = 5x - 2$. 19. _____

- (a) $\frac{1}{2}, 2$ (b) $0, \frac{2}{5}$ (c) $-\frac{1}{2}, -2$ (d) 1

20. Use factoring to solve the polynomial equation $4x^3 - x = 0$. 20. _____

- (a) -4, 4 (b) $-\frac{1}{2}, \frac{1}{2}$ (c) $0, \frac{1}{4}$ (d) $-\frac{1}{2}, 0, \frac{1}{2}$