

1. Which expression is equivalent to $6x^2 - 4x + 3 - 5 - 8x^2 + 7x$?

- a. $-2x^2 + 3x - 2$ b. $-2x^2 + 11x - 2$
 c. $14x^2 + 3x + 8$ d. $14x^2 + 11x + 8$

2. What expression must the center cell of the table contain so that the sums of each row, each column, and each diagonal are equivalent?

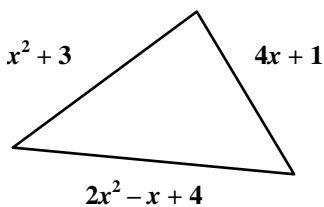
$5x^2 + x - 9$	$-x^2 - x - 4$	$2x^2 + 3x - 2$
$-x^2 + 3x + 2$		$5x^2 - x - 12$
$2x^2 - x - 8$	$5x^2 + 3x - 6$	$-x^2 + x - 1$

- a. $2x^2 + x - 5$ b. $4x^2 + 2x - 10$ c. $6x^2 + 3x - 15$

3. Subtract: $(9y^2 - 5y + 6) - (3y^2 + y - 4)$

- A. $6y^2 - 4y + 2$
 B. $6y^2 - 4y + 10$
 C. $6y^2 + 6y + 2$
 D. $6y^2 - 6y + 10$

4. Which expression represents the perimeter of the triangle shown below?



- A. $x^2 - 5x$
 B. $x^2 - 3x + 3$
 C. $3x^2 - 5x + 6$
 D. $3x^2 + 3x + 8$

5. Subtract the following polynomials:

$$(4y^2 + 7y - 5) - (2y^2 - 5y + 3)$$

E. $2y^2 + 2y - 2$

F. $2y^2 + 12y - 8$

G. $6y^2 + 2y - 2$

H. $6y^2 + 12y - 8$

6. Multiply the binomials $(2x + 3)(3x - 1)$.

I. $5x^2 + 7x - 3$

J. $5x^2 + 5x - 3$

K. $6x^2 + 7x - 3$

L. $6x^2 + 5x - 3$

7. Multiply the polynomials:

$$(x + 5)(2x^2 - 3x + 4)$$

M. $2x^3 + 7x^2 - 11x + 20$

N. $2x^3 + 7x^2 - 19x + 20$

O. $2x^3 + 13x^2 - 11x + 20$

P. $2x^3 + 13x^2 - 19x + 20$

8. Which is equivalent to $3x(x^2y + 2xy^2)$?

A. $3x^2y + 6xy^3$

B. $3x^3y + 2xy^2$

C. $3x^3y + 6x^2y^2$

D. $9x^4y^3$

9. Expand the expression $(3x - 7)^2$.

A. $9x^2 - 42x - 49$

B. $9x^2 - 42x + 49$

C. $9x^2 - 49$

D. $9x^2 + 49$

10. Expand the expression $(3x - 5)^2$.

a. $9x^2 + 25$

b. $9x^2 - 25$

c. $9x^2 + 30x + 25$

d. $9x^2 - 30x + 25$

11. What is the sum of $-3x^2 - 7x + 9$ and $-5x^2 + 6x - 4$?

a) $-8x^2 - x + 5$

b) $-8x^4 - x + 5$

c) $-8x^2 - 13x + 13$

d) $-8x^4 - 13x^2 + 13$

12. The sum of $3x^2 + 5x - 6$ and $-x^2 + 3x + 9$ is

a) $2x^2 + 8x - 15$

b) $2x^2 + 8x + 3$

c) $2x^4 + 8x^2 + 3$

d) $4x^2 + 2x - 15$

13. The sum of $8m^2 - 3m + 10$ and $-3m^2 - 6m - 7$ is

a) $5m^2 - 9m + 3$

b) $5m^2 - 3m - 17$

c) $-11m^2 - 9m - 17$

d) $-11m^2 - 3m + 3$

14. The sum of $3x^2 + 4x - 2$ and $x^2 - 5x + 3$ is

a) $4x^2 + x - 1$

b) $4x^2 - x + 1$

c) $4x^2 + x + 1$

d) $4x^2 - x - 1$

15. What is the sum of $x^2 - 3x + 7$ and $3x^2 + 5x - 9$?

a) $4x^2 - 8x + 2$

b) $4x^2 + 2x + 16$

c) $4x^2 - 2x - 2$

d) $4x^2 + 2x - 2$

16. What is the sum of $2m^2 + 3m - 4$ and $m^2 - 3m - 2$?

- a) $m^2 - 6$
- b) $3m^2 - 6$
- c) $3m^2 + 6m - 6$
- d) $m^2 + 6m - 2$

17. The sum of $3x^2 + x + 8$ and $x^2 - 9$ can be expressed as

- a) $4x^2 + x - 1$
- b) $4x^2 + x - 17$
- c) $4x^4 + x - 1$
- d) $3x^4 + x - 1$

18. The sum of $8x^2 - x + 4$ and $x - 5$ is

- a) $8x^2 + 9$
- b) $8x^2 - 1$
- c) $8x^2 - 2x + 9$
- d) $8x^2 - 2x - 1$

19. The sum of $4x^3 + 6x^2 + 2x - 3$ and $3x^3 + 3x^2 - 5x - 5$ is

- a) $7x^3 + 3x^2 - 3x - 8$
- b) $7x^3 + 3x^2 + 7x + 2$
- c) $7x^3 + 9x^2 - 3x - 8$
- d) $7x^6 + 9x^4 - 3x^2 - 8$

20. Which expression is equivalent to $2(x^2 - 1) + 3x(x - 4)$?

- a) $5x^2 - 5$
- b) $5x^2 - 6$
- c) $5x^2 - 12x - 1$
- d) $5x^2 - 12x - 2$

21. If $y = 3x^3 + x^2 - 5$ and $z = x^2 - 12$, which polynomial is equivalent to $2(y + z)$?

- 1) $6x^3 + 4x^2 - 34$
- 2) $6x^3 + 3x^2 - 17$
- 3) $6x^3 + 3x^2 - 22$
- 4) $6x^3 + 2x^2 - 17$

22. What is the product of $2r^2 - 5$ and $3r$?

- 1) $6r^3 - 15r$
- 2) $6r^3 - 5$
- 3) $6r^2 - 15r$
- 4) $6r^2 - 15$

23. What is the product of $-3x^2y$ and $(5xy^2 + xy)$?

- 1) $-15x^3y^3 - 3x^3y^2$
- 2) $-15x^3y^3 - 3x^3y$
- 3) $-15x^2y^2 - 3x^2y$
- 4) $-15x^3y^3 + xy$

24. What is the product of $(c + 8)$ and $(c - 5)$?

- 1) $c^2 + 3c - 40$
- 2) $c^2 - 3c - 40$
- 3) $c^2 + 13c - 40$
- 4) $c^2 - 40$

25. What is the product of $(3x + 2)$ and $(x - 7)$?

- 1) $3x^2 - 14$
- 2) $3x^2 - 5x - 14$
- 3) $3x^2 - 19x - 14$
- 4) $3x^2 - 23x - 14$

26. The expression $(x - 6)^2$ is equivalent to

- 1) $x^2 - 36$
- 2) $x^2 + 36$
- 3) $x^2 - 12x + 36$
- 4) $x^2 + 12x + 36$

27. The expression $(a^2 + b^2)^2$ is equivalent to

- 1) $a^4 + b^4$
- 2) $a^4 + a^2b^2 + b^4$
- 3) $a^4 + 2a^2b^2 + b^4$
- 4) $a^4 + 4a^2b^2 + b^4$

28. The expression $(2x + 1)^2 - 2(2x^2 - 1)$ is equivalent to

- 1) $4x + 3$
- 2) $2x + 3$
- 3) 3
- 4) -1

29. Which trinomial is equivalent to $3(x - 2)^2 - 2(x - 1)$?

- 1) $3x^2 - 2x - 10$
- 2) $3x^2 - 2x - 14$
- 3) $3x^2 - 14x + 10$

4) $3x^2 - 14x + 14$

30. What is the product of $x^2 - 2x + 3$ and $x + 1$?

- 1) $x^3 - x^2 + x + 3$
- 2) $x^3 - 2x^2 + 3x$
- 3) $x^2 - 3x + 2$
- 4) $x^2 - x + 4$

31. What is the product of $2x + 3$ and $4x^2 - 5x + 6$?

- 1) $8x^3 - 2x^2 + 3x + 18$
- 2) $8x^3 - 2x^2 - 3x + 18$
- 3) $8x^3 + 2x^2 - 3x + 18$
- 4) $8x^3 + 2x^2 + 3x + 18$

32. When $(2x - 3)^2$ is subtracted from $5x^2$, the result is

- 1) $x^2 - 12x - 9$
- 2) $x^2 - 12x + 9$
- 3) $x^2 + 12x - 9$
- 4) $x^2 + 12x + 9$

33. Which expression is *not* equivalent to $-4x^3 + x^2 - 6x + 8$?

- 1) $x^2(-4x + 1) - 2(3x - 4)$
- 2) $x(-4x^2 - x + 6) + 8$
- 3) $-4x^3 + (x - 2)(x - 4)$
- 4) $-4(x^3 - 2) + x(x - 6)$

34. What is the product of $\left(\frac{x}{4} - \frac{1}{3}\right)$ and $\left(\frac{x}{4} + \frac{1}{3}\right)$?

- 1) $\frac{x^2}{8} - \frac{1}{9}$
- 2) $\frac{x^2}{16} - \frac{1}{9}$
- 3) $\frac{x^2}{8} - \frac{x}{6} - \frac{1}{9}$
- 4) $\frac{x^2}{16} - \frac{x}{6} - \frac{1}{9}$

35. What is the product of $\left(\frac{2}{5}x - \frac{3}{4}y^2\right)$ and $\left(\frac{2}{5}x + \frac{3}{4}y^2\right)$?

1) $\frac{4}{25}x^2 - \frac{9}{16}y^4$

2) $\frac{4}{25}x - \frac{9}{16}y^2$

3) $\frac{2}{5}x^2 - \frac{3}{4}y^4$

4) $\frac{4}{5}x$

36. $(12x^5 + 9x^2 - 6x) \div 3x^2$

37. $(20y^3 - 12y + 2) \div 2y$

38. $(-10x^6 + 25x^3 - 5x) \div 5x^2$

39. $(24y^2 - 12y^4 + 16y^3) \div -4y^3$

40. $(-20x^6 + 15x^3 - 35x) \div 5x^2$