

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether the following is a perfect-square trinomial.

1) $x^2 - 18xy + 81y^2$ 1) _____
 A) Yes B) No

2) $x^2 + 24x + 144$ 2) _____
 A) Yes B) No

3) $x^2 - 15x + 225$ 3) _____
 A) No B) Yes

Factor by grouping.

4) $y^2 + 4y + 9y + 36$ 4) _____
 A) $y(y + 49)$ B) $(y + 4)(y + 9)$ C) $(y + 4)(y - 9)$ D) $(y - 4)(y - 9)$

Factor by grouping, if possible.

5) $x^8 + x^4 + x^4 + 1$ 5) _____
 A) $(x^6 + 1)(x^2 + 1)$ B) $(x^4 + 1)(x^4 + x^4)$ C) $(x^4 + 1)(x^4 + 1)$ D) $(x^8 + 1)(x^4 + 1)$

Solve by factoring and using the principle of zero products.

6) $4k^2 - 25 = 0$ 6) _____
 A) $\frac{5}{2}, -\frac{5}{2}$ B) 5, 0 C) $\frac{2}{5}, 0$ D) $\frac{2}{5}, -\frac{2}{5}$

7) $x^2 + 6x - 16 = 0$ 7) _____
 A) 8, 2 B) 8, -2 C) -8, 1 D) -8, 2

8) $a^2 - 19a + 84 = 0$ 8) _____
 A) -12, -7 B) -84, -1 C) 1, 84 D) 12, 7

Factor completely. ~~Factor completely.~~

9) $81s^2 - 16t^4$ 9) _____
 A) $(9s + 4t^2)^2$ B) $(9s + 4t^2)(9s - 4t^2)$
 C) $(9s - 4t^2)^2$ D) $(81s + t^2)(s - 16t^2)$

10) $8t^2 + 18t + 9$ 10) _____
 A) $(8t + 3)(t + 3)$ B) $(2t + 3)(4t + 3)$ C) Prime D) $(2t - 3)(4t - 3)$

11) $15z^2 - 8z - 16$ 11) _____
 A) $(15z - 4)(z + 4)$ B) $(15z + 1)(z - 16)$ C) $(3z + 4)(5z - 4)$ D) $(3z - 4)(5z + 4)$

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|---------------------------|-----------------------|------------------------|------------------------|-----------------------|-----------|
| 12) $8x^2 - 28x - 16$ | A) $(8x - 4)(x + 4)$ | B) $4(2x + 1)(x - 4)$ | C) $(2x - 1)(4x + 16)$ | D) $4(2x - 1)(x + 4)$ | 12) _____ |
| 13) $16 + 8x + x^2$ | A) $(x + 4)(x - 4)$ | B) Prime | C) $(x - 4)^2$ | D) $(x + 4)^2$ | 13) _____ |
| 14) $x^5 - 11x^4 + 30x^3$ | A) $(x - 5)(x + 6)$ | B) $x(x^3 + 5)(x - 6)$ | C) $x^3(x - 5)(x - 6)$ | D) Prime | 14) _____ |
| 15) $2x^3 + 11x^2 - 6x$ | A) $x(2x - 1)(x + 6)$ | B) $(2x^2 - 1)(x + 6)$ | C) $x(2x + 1)(x - 6)$ | D) Prime | 15) _____ |