

Practice Exercises on Factoring Perfect Square Trinomials

A. Perfect Square Trinomial or Not

Write Yes if the algebraic expression is a perfect square trinomial or No if it is not a perfect square trinomial. One point each.

1. $9x^2 - 36xy + 36y^2$
2. $k^2 - 12km + 36m^2$
3. $4n^2 - 10n + 25$
4. $121a^4 + 66a^2b + 9b^2$
5. $a^2 + 5a + 25$

B. Multiple Choice

Factor the following trinomials completely. Choose the correct answer from the given choices. One point each.

1. $16x^2 - 24xy + 9y^2$
a) $(8x + 3y)^2$
b) $(8x - 3y)^2$
c) $(4x + 3y)^2$
d) $(4x - 3y)^2$
2. $9x^4 - 24x^2y + 16y^2$
a) $(3x - 4y^2)^2$
b) $(3x + 4y^2)^2$
c) $(3x^2 - 4y)^2$
d) $(3x^2 + 4y)^2$
3. $4a^2 + 20a + 25$
a) $(2a + 5)^2$
b) $(2a - 5)^2$
c) $(2a^2 + 5)^2$
d) $(2a^2 - 5)^2$
4. $4m^4n^2 - 12m^2np^3 + 9p^6$
a) $(2m^2n - 3p^3)^2$
b) $(2m^2n + 3p^3)^2$
c) $(2m^4n^2 - 3p^3)^2$
d) $(2m^4n^2 + 3p^3)^2$
5. $16m^4 + 40m^2n^2 + 25n^4$
a) $(4m^2 + 5n^2)^2$
b) $(4m^2 - 5n^2)^2$
c) $(4m^2 + 5n^4)^2$
d) $(4m^2 - 5n^4)^2$
6. $36x^2 - 84xy^3 + 49y^6$
a) $(6x^2 - 7y^3)^2$
b) $(6x^2 + 7y^3)^2$
c) $(6x - 7y^3)^2$
d) $(6x + 7y^3)^2$

7. $121x^4 + 66x^2y + 9y^2$

a) $(11x^2 + 3y)^2$

c) $(11x^4 + 3y)^2$

b) $(11x^2 - 3y)^2$

d) $(11x^4 - 3y)^2$

8. $49a^2 - 84ab + 36b^2$

a) $(7a + 6b^2)^2$

c) $(7a + 6b)^2$

b) $(7a - 6b^2)^2$

d) $(7a - 6b)^2$

9. $81m^4n^2 + 36m^2nz^3 + 4z^6$

a) $(9m^2n - 2z^3)^2$

c) $(9m^2n - 2z^6)^2$

b) $(9m^2n + 2z^3)^2$

d) $(9m^2n + 2z^6)^2$

10. $25m^8 - 30m^4n + 9n^2$

a) $(5m^8 - 3n)^2$

c) $(5m^4 - 3n)^2$

b) $(5m^8 + 3n)^2$

d) $(5m^4 + 3n)^2$

C. Fill in the blanks

Type the correct answer in the blank. One point each.

1. $a^2 + 6a + 9 = (a \text{ ____ } 3)^2$

2. $25n^2 - 30n + 9 = (\text{____} - 3)^2$

3. $100p^2 - 60p + 9 = (10p - \text{____})^2$

4. $25x^2 + 40x + 16 = (5x \text{ ____ } 4)^2$

5. $4b^2 + 12b + 9 = (\text{____} + 3)^2$

6. $100n^4 - 140n^2 + 49 = (10n^2 \text{ ____ } 7)^2$

7. $121m^4 - 44m^2n^2 + 4n^4 = (11m^2 - \text{____})^2$

8. $4x^4m^2 + 28mx^2y^2 + 49y^4 = (\text{____} + 7y^2)^2$

9. $x^4 - 16x^2y^4 + 64y^8 = (x^2 \text{ ____ } 8y^4)^2$

10. $64x^6 + 16x^3y^2 + y^4 = (8x^3 + \text{____})^2$