

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Factoring Special Cases Assignment

Factor the following polynomials in difference of two square.

1.  $4x^2 - 36$

2.  $y^2 - 25$

3.  $9a^2 - 4b^2$

4.  $25a^2 - 16$

5.  $100x^2 - 1$

6.  $4y^2 - 64$

7.  $4b^2 - 121$

8.  $d^2 - 144$

9.  $y^2 - 169$

10.  $9a^2 - 196$

## Factoring Special Cases Assignment

Factor the following perfect square trinomials.

11.  $x^2 + 16x + 64$

12.  $4y^2 - 40y + 100$

13.  $a^2 - 10a + 25$

14.  $4a^2 + 16a + 16$

15.  $4x^2 + 60x + 225$

16.  $9y^2 - 72y + 144$

17.  $9b^2 + 54b + 81$

18.  $4d^2 - 44d + 121$

19.  $4y^2 + 24y + 36$

20.  $25a^2 - 140a + 196$

# Factoring Special Cases Assignment

Answer:

Factor the following polynomials in difference of two square.

1.  $4x^2 - 36$

Answer:

$$4x^2 = (2x)(2x)$$

$$36 = (6)(6)$$

$$(2x + 6)(2x - 6)$$

3.  $49a^2 - 4b^2$

Answer:

$$49a^2 = (7a)(7a)$$

$$4b^2 = (2b)(2b)$$

$$(7a + 2b)(7a - 2b)$$

5.  $100x^2 - 1$

Answer:

$$100x^2 = (10x)(10x)$$

$$1 = (1)(1)$$

$$(10x + 1)(10x - 1)$$

7.  $4b^2 - 121$

Answer:

$$4b^2 = (2b)(2b)$$

$$121 = (11)(11)$$

$$(2b + 11)(2b - 11)$$

9.  $y^2 - 169$

Answer:

$$y^2 = (y)(y)$$

$$169 = (13)(13)$$

$$(y + 13)(y - 13)$$

2.  $y^2 - 25$

Answer:

$$y^2 = (y)(y)$$

$$25 = (5)(5)$$

$$(y + 5)(y - 5)$$

4.  $25a^2 - 16$

Answer:

$$25a^2 = (5a)(5a)$$

$$16 = (4)(4)$$

$$(5a + 4)(5a - 4)$$

6.  $4y^2 - 64$

Answer:

$$4y^2 = (2y)(2y)$$

$$64 = (8)(8)$$

$$(2y + 8)(2y - 8)$$

8.  $d^2 - 144$

Answer:

$$d^2 = (d)(d)$$

$$144 = (12)(12)$$

$$(d + 12)(d - 12)$$

10.  $9a^2 - 196$

Answer:

$$9a^2 = (3a)(3a)$$

$$196 = (14)(14)$$

$$(3a + 14)(3a - 14)$$

## Factoring Special Cases Assignment

Factor the following perfect square trinomials.

11.  $x^2 + 16x + 64$

Answer:

$$x^2 = (x)(x)$$

$$64 = (8)(8)$$

$$16x = 8x + 8x$$

$$(x + 8)^2$$

13.  $a^2 - 10a + 25$

Answer:

$$a^2 = (a)(a)$$

$$25 = (5)(5)$$

$$-10a = -5a - 5a$$

$$(a - 5)^2$$

15.  $4x^2 + 60x + 225$

Answer:

$$4x^2 = (2x)(2x)$$

$$225 = (15)(15)$$

$$60x = 30x + 30x$$

$$(2x + 15)^2$$

17.  $9b^2 + 54b + 81$

Answer:

$$9b^2 = (3b)(3b)$$

$$81 = (9)(9)$$

$$54b = 27b + 27b$$

$$(3b + 9)^2$$

19.  $4y^2 + 24y + 36$

Answer:

$$4y^2 = (2y)(2y)$$

$$36 = (6)(6)$$

$$24y = 12y + 12y$$

$$(2y + 6)^2$$

12.  $4y^2 - 40y + 100$

Answer:

$$4y^2 = (2y)(2y)$$

$$100 = (10)(10)$$

$$-40y = -20y - 20y$$

$$(2y - 20)^2$$

14.  $4a^2 + 16a + 16$

Answer:

$$4a^2 = (2a)(2a)$$

$$16 = (4)(4)$$

$$16a = 8a + 8a$$

$$(2a + 4)^2$$

16.  $9y^2 - 72y + 144$

Answer:

$$9y^2 = (3y)(3y)$$

$$144 = (12)(12)$$

$$-72y = -36y - 36y$$

$$(3y - 12)^2$$

18.  $4d^2 - 44d + 121$

Answer:

$$4d^2 = (2d)(2d)$$

$$121 = (11)(11)$$

$$-44d = -22d - 22d$$

$$(2d - 11)^2$$

20.  $25a^2 - 140a + 196$

Answer:

$$25a^2 = (5a)(5a)$$

$$196 = (14)(14)$$

$$-140a = -70a - 70a$$

$$(5a - 14)^2$$