

Factoring Polynomials Part 3

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PRE-CALCULUS 11 QUADRATIC EQUATIONS FACTORIZING POLYNOMIALS PART 3

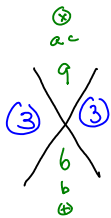
A. Factoring Polynomial Review

Factor the following.

1) $75a^2bc^2 - 48b^3$

$$3b(25a^2c^2 - 16b^2)$$

$$3b(5ac + 4b)(5ac - 4b)$$



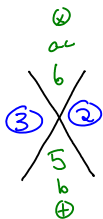
2) $18m^3 + 12m^2n + 2mn^2$

$$2m(9m^2 + 6mn + n^2)$$

$$(9m^2 + 3mn) + (3mn + n^2)$$

$$3m(3m + n) + n(3m + n)$$

$$2m(3m + n)(3m + n) \text{ or } 2m(3m + n)^2$$



3) $(2x - 5y)^2 + 5(2x - 5y) + 6$

$$m = (2x - 5y)$$

$$m^2 + 5m + 6$$

$$(m + 3)(m + 2)$$

$$((2x - 5y) + 3)((2x - 5y) + 2)$$

$$(2x - 5y + 3)(2x - 5y + 2)$$

$$4) 20(2x+y)^2 - 5(x-2y)^2$$

$$m = (2x+y), \quad n = (x-2y)$$

$$20m^2 - 5n^2$$

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

$$5(2m+n)(2m-n)$$

$$5(2(2x+y) + (x-2y))(2(2x+y) - (x-2y))$$

$$5(4x+2y+x-2y)(4x+2y-x+2y)$$

$$5(5x)(3x+4y)$$

$$\boxed{25x(3x+4y)}$$

$$\begin{array}{r} 2 \\ 6 \\ 15 \\ 20 \end{array} \begin{array}{l} \text{ac} \\ \text{bc} \\ \text{ad} \\ \text{bd} \end{array}$$

$$5) 3x^2 + \frac{5}{2}x + \frac{1}{2}$$

$$\frac{1}{2}(6x^2 + 5x + 1)$$

$$(x + \frac{3}{6})(x + \frac{2}{6})$$

$$(x + \frac{1}{3})(x + \frac{1}{3})$$

$$\boxed{\frac{1}{2}(2x+1)(3x+1)}$$

Assignment: Factoring Polynomial Practice #1 – 18

PRE-CALCULUS 11
QUADRATIC EQUATIONS
FACTORING POLYNOMIALS ASSIGNMENT

A. Factor the following as completely as possible.

1) $4x^2y - 5xy$

2) $m^2 - 36$

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

4) $4x^2 - 7x + 3$

5) $x^2 + \frac{11}{2}x + 6$

6) $5a^2 - 180$

7) $3m^2n + 18mn + 24n$

8) $\frac{1}{10}x^2 + \frac{4}{5}x + \frac{3}{2}$

9) $8a^2b - 72b$

10) $9m^2 + 30mn + 25n^2$

11) $-3x^2 + 12x + 15$

12) $6x^3 + 66x^2 + 180x$

13) $(2m + n)^2 - (2m - n)^2$

14) $3m^2 - 10m - 8$

15) $(x + 3)^2 - y^2$

16) $x^2 + 2x - \frac{5}{4}$

17) $30a^2 - 32a - 30$

18) $8x^2 - 40xy + 50y^2$

Answers

1) $xy(4x - 5)$

2) $(m + 6)(m - 6)$

3) $(x + 3)(x - 5)$

4) $(4x - 3)(x - 1)$

5) $\frac{1}{2}(2x + 3)(x + 4)$

6) $5(a + 6)(a - 6)$

7) $3n(m + 4)(m + 2)$

8) $\frac{1}{10}(x + 5)(x + 3)$

9) $8b(a + 3)(a - 3)$

10) $(3m + 5n)^2$

11) $-3(x - 5)(x + 1)$

12) $6x(x + 6)(x + 5)$

13) $8mn$

14) $(3m + 2)(m - 4)$

15) $(x + y + 3)(x - y + 3)$

16) $\frac{1}{4}(2x + 5)(2x - 1)$

17) $2(5a + 3)(3a - 5)$

18) $2(2x - 5y)^2$