

5.17

Factoring the Product of a Quadratic Trinomial with a Monomial

• Example 1

Factor

$$15x^4 - 38x^3 + 7x^2$$

We begin by factoring out x^2 , which is a factor common to all terms.

$$15x^4 - 38x^3 + 7x^2 = x^2(15x^2 - 38x + 7)$$

We now check if the quadratic factor can be factored further. You can verify that

$$15x^2 - 38x + 7 = (5x - 1)(3x - 7)$$

Thus,

$$15x^4 - 38x^3 + 7x^2 = x^2(5x - 1)(3x - 7)$$



CHECK YOURSELF 1

Factor.

$$6x^3 + 11x^2 - 10x$$



CHECK YOURSELF ANSWER

1. $x(2x + 5)(3x - 2)$.

5.17 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Factor each of the following polynomials completely.

1. $20x^2 - 20x - 15$

2. $24x^2 - 18x - 6$

3. $8m^2 + 12m + 4$

4. $14x^2 - 20x + 6$

5. $2x^3 - 2x^2 - 4x$

6. $2y^3 + y^2 - 3y$

7. $2y^4 + 5y^3 + 3y^2$

8. $4z^3 - 18z^2 - 10z$

9. $36a^3 - 66a^2 + 18a$

10. $20n^4 - 22n^3 - 12n^2$