

Journal Entry:

Solve It! Getting Ready!

You set aside part of a rectangular plot of land for a garden and seed the rest of the plot with grass, as shown. Grass seed costs \$.03 per square foot. Write an expression for the total cost of the seed. Suppose you buy \$50 worth of seed. How wide can the section of grass be? Explain your reasoning.

Diagram: A rectangular plot with a total width of 10 ft and a total height of 45 ft. A section of width x ft is shaded green (grass), and the remaining section of width $10 - x$ ft is shaded with flowers (garden).

Section 8-2 Multiplying and Factoring

Students will be able to:
 -multiply a monomial by a polynomial
 -factor a monomial from a polynomial

How would you multiply?:

$2(x - 5)$ *Distribute*
 $2x - 10$

We can also use the distributive property to multiply a monomial by a polynomial:

$3x(2x^2 - 5x + 7) = 6x^3 - 15x^2 + 21x$

Factoring a polynomial reverses the multiplication process. The first step is to look for the greatest common factor.

(undistribute)

What is the greatest common factor: \rightarrow evenly divides into each

$3x^4 - 9x^2 - 12x$
 $3x$
 $3, 9, 12 \rightarrow 3$
 $x^4, x^2, x \rightarrow x$

What is the greatest common factor?

$5a^5 - 45a^2 - 15a$ $5a$
 $7s^3 - 49s^2$ $7s^2$

What is the greatest common factor?

$$7a^3 - 14a^2 + 70a \quad 7a$$

We will use the greatest common factor to factor polynomials. Look at previous example.

$$\frac{7a^3}{7a} - \frac{14a^2}{7a} + \frac{70a}{7a}$$

GCF = 7a ← undistribute
↓ divide it out

$$7a(a^2 - 2a + 10)$$

-Can check by re-distributing + see if you get original

Factor:

$$\frac{12x^2}{2} - \frac{4x}{2} + \frac{6}{2}$$

GCF = 2

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

Factor:

$$\frac{-6x^4}{-6x^2} - \frac{18x^3}{-6x^2} - \frac{12x^2}{-6x^2}$$

GCF = -6x²

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

A circle with a radius r is cut from a square that has side length $3r$. Write an expression in factored form for the shaded area.

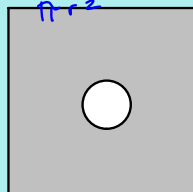
$$A_{\text{shaded}} = A_{\text{sq}} - A_{\text{circ}}$$

$$A_{\text{sq}} = (3r)^2 = 9r^2$$

$$A_{\text{circ}} = \pi r^2$$

$$A_{\text{shaded}} = 9r^2 - \pi r^2$$

$$A_{\text{shaded}} = r^2(9 - \pi)$$



Hwk: pg. 495 - 496
#10 - 38 (evens), 39, 40, 43

Attachments

8-2cont.notebook