

Tommmorroww:

Quiz: 9.1-9.4

- adding/subtracting
- multiplying
- patterns
- factoring/solving

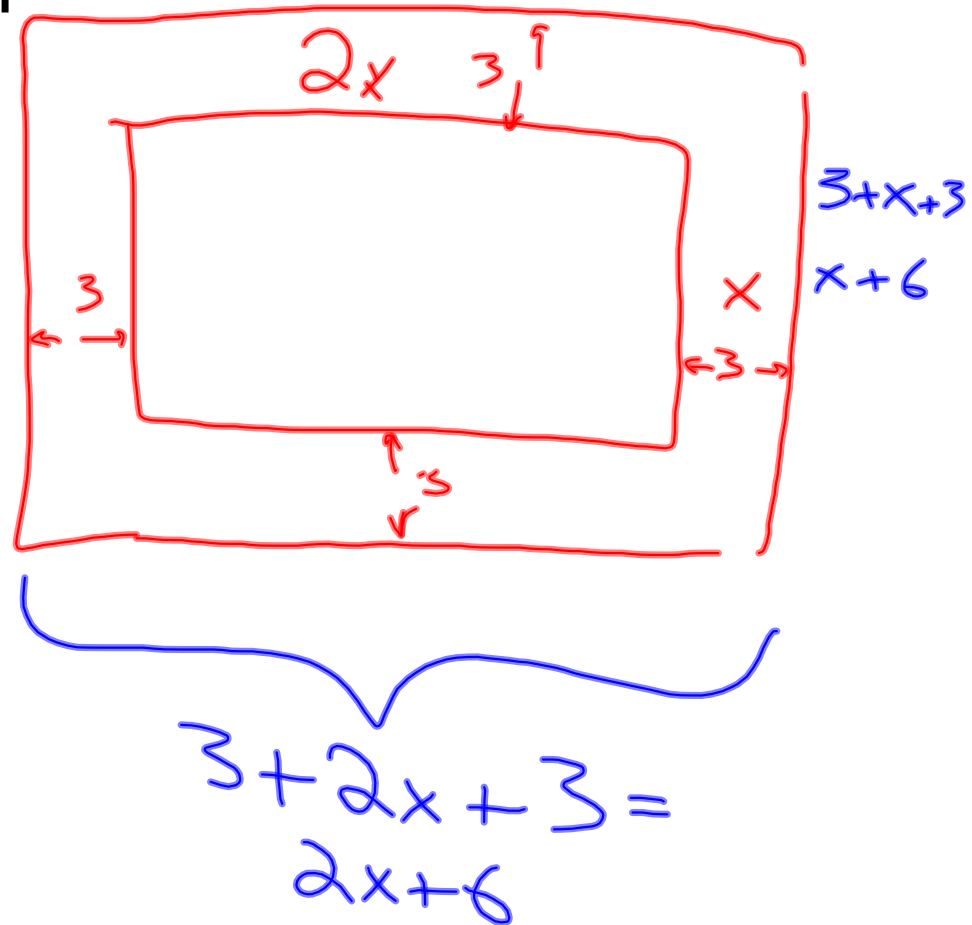
## Homework Review: p. 572

⑨  $A = L \times W$

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

$$2x^2 + 12x + 6x + 36$$

$$2x^2 + 18x + 36$$



$$\textcircled{5} \quad (2+8p)(2+10p)$$

$$4 + -20p + 16p + -80p^2$$

$$4 + -4p + -80p^2$$

$$-80p^2 + -4p + 4$$

# Solving Polynomial Equations

$$a \cdot b = 0$$

then:  $a=0$  or  $b=0$

Zero-product property

How it applies:

$$(x-3)(2x+5)=0$$

$$\begin{array}{r} \downarrow \\ x-3=0 \\ +3 \quad +3 \\ \hline x=3 \end{array}$$

$$\begin{array}{r} 2x+5=0 \\ -5 \quad -5 \\ \hline 2x = -5 \\ \hline 2 \quad 2 \\ \hline x = -\frac{5}{2} \end{array}$$

## Factoring out a Greatest Common Factor:

The largest constant and variables multiplied together that divides into each term of a polynomial

What is a GCF?

$$5(x-2) = 5x - 10$$

$$5p^2q + 10q$$

$$5q(p^2 + 2)$$

$$\frac{\cancel{5}p^2\cancel{q}}{\cancel{5}\cancel{q}} \quad \frac{\cancel{10}\cancel{q}}{\cancel{5}\cancel{q}} 2$$

How to find a GCF

- Find the largest constant that's a factor to all terms
- For each variable, find the largest exponent that goes into each term
- Divide each term by the GCF to determine what goes in the parentheses

# Solving a Polynomial by finding a GCF:

$$8r^2 - 24r = 0$$

Factor the polynomial

Use the zero-products property

$$8r(r - 3) = 0$$

$\downarrow$   
 $\frac{8r}{8} = 0$   
 $r = 0$

$\downarrow$   
 $r - 3 = 0$   
 $+3 \quad +3$   
 $r = 3$

$$\frac{8r^2}{8r} = r \quad \frac{-24r}{8r} = -3$$

$$8(1)^2 - 24(1) = 0$$

$$8 - 24 = 0$$

$$-16 = 0$$

**Solve the equation.**

1.  $(x + 14)(x - 3) = 0$

$$x = -14 \text{ or}$$
$$x = 3$$

2.  $(m - 12)(m + 5) = 0$

$$m = 12$$
$$m = -5$$

3.  $(p + 15)(p + 24) = 0$

$$p = -15$$
$$p = -24$$

4.  $(n - 8)(n - 9) = 0$

$$n = 8$$
$$n = 9$$

5.  $(d + 8)\left(d - \frac{1}{2}\right) = 0$

$$d = -8$$
$$d = \frac{1}{2}$$

6.  $\left(c + \frac{3}{4}\right)(c - 6) = 0$

$$c = -\frac{3}{4}$$
$$c = 6$$

**Factor out the greatest common monomial factor.**

**13.**  $10x - 10y$

$$10(x - y)$$

**14.**  $8x^2 + 20y$

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

**15.**  $18a^2 - 6b$

$$6(3a^2 - b)$$



**22.**  $m^2 - 10m = 0$

$$m(m+10) = 0$$
$$\boxed{m=0} \quad m+10=0$$
$$\boxed{m=-10}$$

**23.**  $b^2 + 14b = 0$

**24.**  $5w^2 - 5w = 0$

**28.**  $6n^2 - 15n = 0$

**29.**  $-8y^2 + 10y = 0$

**30.**  $-10b^2 + 25b = 0$

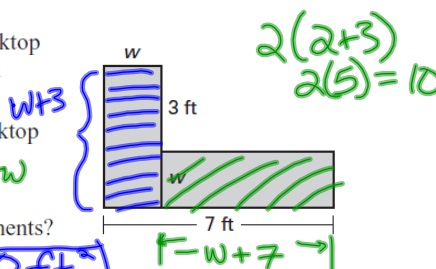
$$\begin{aligned} & -2y(4y+5)=0 \\ & \frac{-2y}{-2} = \frac{0}{-2} \quad 4y+5=0 \quad \frac{4y}{4} = \frac{-5}{4} \\ & \boxed{y=0} \quad \frac{-8y^2}{-2y} = 4y \quad \frac{-10y}{-2y} = 5 \quad \boxed{y = \frac{-5}{4}} \end{aligned}$$

**Desktop Areas** You have two components to the desktop where you do your homework that fit together into an L shape. The two components have the same area.

a. Write an equation that relates the areas of the desktop components.

b. Find the value of  $w$ .

c. What is the combined area of the desktop components?



$$w(w+3) = w^2 + 3w$$

$$w(-w+7) = -w^2 + 7w$$

$$w^2 + 3w = -w^2 + 7w$$

$$+w^2 \quad +w^2$$

$$2w^2 + 3w = 7w$$

$$-7w \quad -7w$$

$$2w^2 + -4w = 0$$

$$2w(w + -2) = 0$$

$$\frac{2w}{2} = \frac{0}{2}$$

$$w = 0$$

$$w + -2 = 0$$

$$w = 2$$

Homework:  
p. 578, 17-25, 40-45