

Tomorrow:
Quiz over 9.1-9.4!

Adding and subtracting polynomials
Multiplying polynomials
Special patterns
Factoring / solving polynomials

Homework Review: 9.3

$$\textcircled{24} \quad (6x + 5)^2 = \underline{36x^2 + 60x + 25}$$

$$(6x)^2 = 6x \cdot 6x = 36x^2$$

$$2 \cdot 6x \cdot 5 = 2 \cdot 6 \cdot 5 \cdot x = 60x$$

$$\textcircled{2} \quad (t - 7)^2 = t^2 + -14t + 49$$

$$2 \cdot t \cdot (-7) = -14t$$

$$(-7)^2 = -7 \cdot -7 = 49$$

(40)

G = green
y = yellow

①

	G	y
G	<u>G</u> <u>G</u>	<u>G</u> y
y	<u>G</u> y	yy ← yellow

②

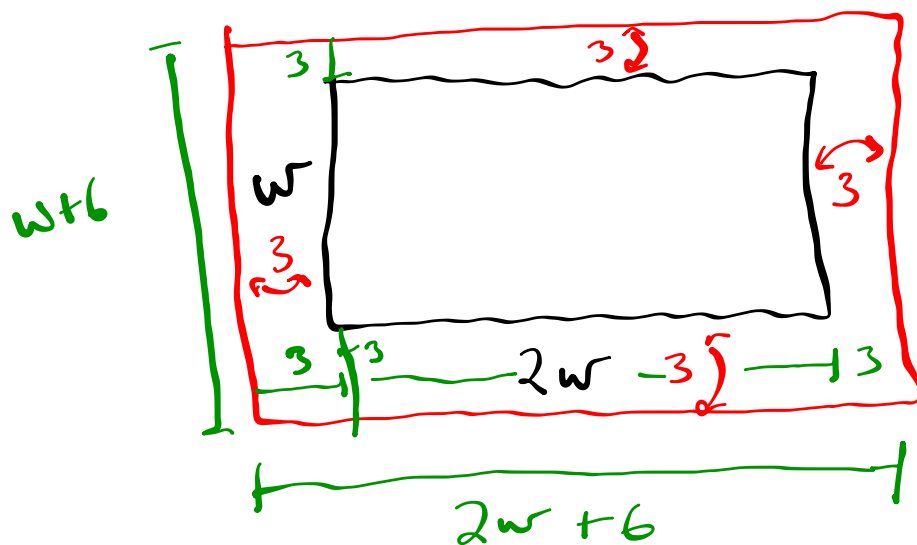
$$G^2 + 2Gy + y^2$$

$$GG + 2Gy + yy$$

$$1 : 2 : 1$$

⑨

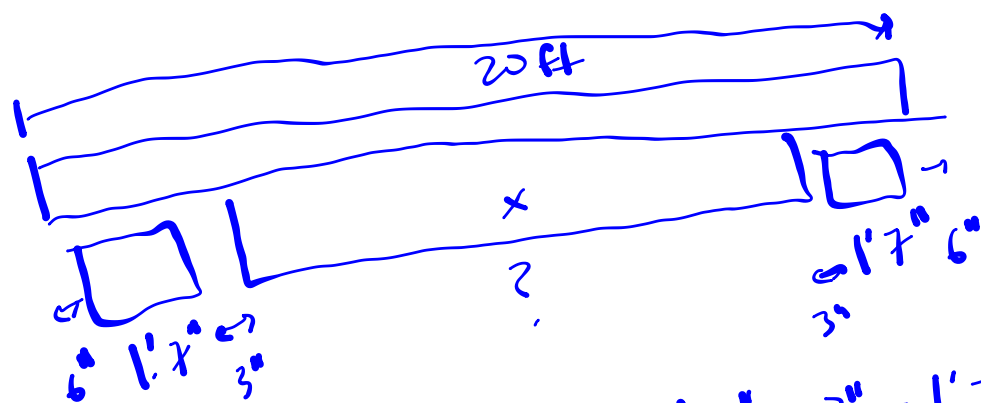
$$2w^2 + 3w + 6$$



$$A = l \times w$$

$$A = (w + 6)(2w + 6)$$

$$= 2w^2 + 18w + 36$$



$$x = 20' - 6" - 17' - 3" - 17' - 6" - 3"$$

Solving Polynomial Equations

if $a \cdot b = 0$ Zero-product property
 then $a = 0$ or $b = 0$
 How it applies:

$$0.5 = 0$$

$$0 \cdot 0 = 0$$

$$7 \cdot 0 = 0$$

$$1,213,412,37 \cdot 0 = 0$$

if $3x(4x-1) = 0$ then: $3x = 0$ or $4x-1 = 0$

if $(7x^2-2)(3x+4) = 0$ then: $7x^2-2 = 0$ or $3x+4 = 0$

Factoring out a Greatest Common Factor:

the largest monomial
that evenly divides into
another polynomial

What is a GCF?

looks like:

" $4x^2y$ "

or

" $17x$ "

Greatest common factor

$$\begin{array}{c} \text{Greatest common factor} \\ \downarrow \\ \underline{5p^2q} + \underline{10q} \end{array}$$

remainder

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

$$\begin{array}{r} 5p^2q \\ \underline{5q} \\ 5q \end{array}$$

$$\frac{10q}{5q} = 2$$

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

How to find a GCF For Each Term:

* Constant ✓

* Variable (exponent) ✓

* Divide

Solving a Polynomial by finding a GCF:

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

Factor out the GCF

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

1. Factor the polynomial

2. Use the zero-products property

$$\frac{8r^2}{8r} = r$$

$$\frac{-24r}{8r} = -3$$

z.p.p.

Either: $8r = 0$

or $r - 3 = 0$

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

$$\frac{r - 3}{+3 +3} = 0$$

$$\boxed{r = 0 \quad \text{or} \quad r = 3}$$

Either $r = 0$ or $r = 3$ if $8r^2 - 24r = 0$

Solve the equation.

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

$$\begin{array}{lcl}
 x + 14 = 0 & & x - 3 = 0 \\
 -14 \quad -14 & & +3 \quad +3 \\
 \hline
 x = -14 \text{ or } x = 3
 \end{array}$$

$-14, 3$

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

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

$$\begin{array}{lcl}
 m - 12 = 0 & & m + 5 = 0 \\
 +12 \quad +12 & & -5 \quad -5 \\
 \hline
 m = 12 \text{ or } m = -5
 \end{array}$$

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

$$\begin{array}{lcl}
 d + 8 = 0 & & d - \frac{1}{2} = 0 \\
 \hline
 d = -8 \text{ or } d = \frac{1}{2}
 \end{array}$$

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

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

Factor out the greatest common monomial factor.

13. $10x - 10y$

$$10(x - y)$$

14. $8x^2 + 20y$

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

15. $18a^2 - 6b$

Solve the equation.

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

$$m(m-10)=0$$

$$m=0 \quad m-10=0$$

$$\swarrow \quad \searrow$$

$$m=10$$

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

$$3n(2n-5)=0$$

$$\frac{3n=0}{3} \quad \frac{2n-5=0}{+5}$$

$$n=0 \quad \frac{2n=5}{2}$$

$$n=\frac{5}{2}$$

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

$$b(b+14)=0$$

$$b=0 \quad b=-14$$

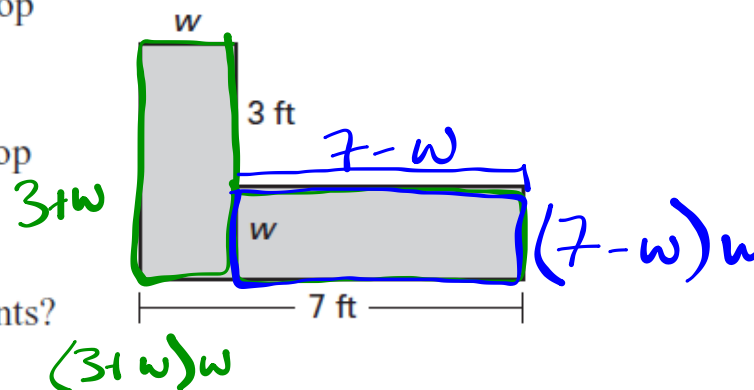
29. $-8y^2 - 10y = 0$

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

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

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.

- Write an equation that relates the areas of the desktop components.
- Find the value of w .
- What is the combined area of the desktop components?



$$(3+w)w - (7-w)w = 0$$

$$3w + w^2 - (7w - w^2) = 0$$

$$3w + w^2 - 7w + w^2 = 0$$

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

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

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

$$w = 0$$

$$w - 2 = 0$$

$$w = 2$$

$$w = 2\text{ ft}$$

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