

1.) **Geometry** To find S , the sum of the measures of the interior angles of a polygon with n sides, you can use the formula $S = (n - 2)180$.

a. Transform the formula to find the number of sides in terms of the interior angle sum. Solve this equation for n .

b. Complete the table at the right using your new formula.

S	n
540	5
900	7
360	4
1260	9

$$\begin{aligned}
 a.) S &= (n-2)180 \\
 S &= 180n - 360 \\
 +360 & \quad +360 \\
 \hline
 S+360 &= 180n \\
 \frac{S+360}{180} &= n
 \end{aligned}$$

$$\begin{aligned}
 a.) S &= (n-2)180 \\
 \frac{S}{180} &= \frac{(n-2)180}{180} \\
 \frac{S}{180} &= n-2 \\
 \frac{S}{180} + 2 &= n
 \end{aligned}$$

PSAT Practice –

2.) For what value of h is $24 = \frac{h}{10} - 6$?

$$\begin{aligned}
 +6 & \quad +6 \\
 30 &= \frac{h}{10} \\
 h &= 300
 \end{aligned}$$

3.) What is the value of a if $(2a + 3) - (4a - 8) = 7$?

$$2a + 3 - 4a + 8 = 7$$

$$-2a + 11 = 7$$

$$-2a = -4$$

$$a = 2$$

10.) a. Let t = time for the moving van

Hwk #18 Answers

b. $t - \frac{3}{4}$

13.) a. $x; 3 - x$

b. $320x = 840 - 280x; 1\frac{2}{5}$

c.

Vehicle	Rate	Time	Distance Traveled
Moving Van	35	t	$35t$
Car	50	$t - \frac{3}{4}$	$50\left(t - \frac{3}{4}\right)$

d. $35t = 50\left(t - \frac{3}{4}\right)$

$$t = 2\frac{1}{2}, \quad 2\frac{1}{2} - \frac{3}{4} = 1\frac{3}{4}h$$

10. A moving van leaves a house traveling at an average rate of 35 mi/h. The car leaves the house $\frac{3}{4}$ hour later following the same route in a car. They travel at an average rate of 50 mi/h.
- Define a variable for the time traveled by the moving van.
 - Write an expression for the time traveled by the car.
 - Copy and complete the table.

Vehicle	Rate	Time	Distance Traveled
Moving van	■	■	■
Car	■	■	■

- Write and solve an equation to find out how long it will take the car to catch up with the moving van.

13. **Air Travel** An airplane flies from New Orleans, Louisiana, to Atlanta, Georgia, at an average rate of 320 miles per hour. The airplane then returns at an average rate of 280 miles per hour. The total travel time is 3 hours.
- Define a variable for the flying time from New Orleans to Atlanta. Write an expression for the travel time from Atlanta to New Orleans.
 - Write and solve an equation to find the flying time from New Orleans to Atlanta.

14. John and William leave their home traveling in opposite directions on a straight road. John travels at 40 miles per hour and William travels at 30 miles per hour. How long will it take them to be 140 miles apart?
15. Two bicyclists ride in opposite directions. The speed of the first bicyclist is 5 miles per hour faster than the second. After 2 hours they are 70 miles apart. Find their rates.

Opposite Direction Travel:

Two people start at the same spot and travel in opposite directions. What is true about the distances traveled?

The distance they are apart equals the **SUM** of their distances.

Opposite Direction Travel

Omar heads due east in his boat and sails for 4 hours. Dwayne heads due west in his boat 5 faster than Omar and sails for 3 hours.

When they both have stopped they are 127 miles apart.

What do you do with their distances?

	Distance	= Rate • Time
Omar	$4r$	r \cdot 4
Dwayne	$3(r+5)$	$r+5$ \cdot 3

$\Rightarrow 21 \text{ mph}$

$$4r + 3(r+5) = 127$$

$$4r + 3r + 15 = 127$$

$$7r + 15 = 127$$

$$7r = 112$$

$$r = 16$$

Two planes leave the same airport at the same time traveling in opposite directions. One plane travels 40 mph slower than the other plane. After 6 hours they are 4560 miles apart.

Find how fast each plane is traveling.

	Distance	= Rate • Time
P1	$6r$	r \cdot 6
P2	$6(r-40)$	$r-40$ \cdot 6

$\Rightarrow 360 \text{ mph}$

$$6r + 6(r-40) = 4560$$

$$6r + 6r - 240 = 4560$$

$$12r = 4800$$

$$r = 400$$

You can now finish Hwk #19 - due
Thursday

Sec. 2-5

Pages: 108

Problems: #14, 15

IXL #7 - J.10 & J.11 due Friday at 4pm!

Sect. 2.4 & 2.6 Quiz Review --

Find the exact solution to each.

1.) $6 - 3(w + 5) + 7w = 2(w - 6) + 2w - 4$

$$6 - 3w - 15 + 7w = 2w - 12 + 2w - 4$$

$$4w - 9 = 4w - 16$$

$$-9 \neq -16 \quad \emptyset$$

2.) Solve for K

$$H = B(R - WK) + G$$

$-G$

$-G$

$$\frac{H-G}{B} = \frac{B(R-WK)}{B}$$

$$\frac{H-G-R}{B} = K$$

$$\frac{H-G}{B} = R - WK$$

$$\frac{H-G}{B} - R = -WK$$

3.) Solve for N

④

$$\frac{MN+P}{E} - K = X$$

②

③

$$\frac{MN+P}{E} = X + K$$

①

$$MN+P = E(X+K)$$

$$MN = E(X+K) - P$$

$$N = \frac{E(X+K) - P}{M}$$

$$4.) -3(x-1) + 8(x-3) = 6x + 7 - 5x$$

$$-3x + 3 + 8x - 24 = 6x + 7 - 5x$$

$$5x - 21 = x + 7$$

$$4x - 21 = 7$$

$$4x = 28$$

$$x = 7$$

$$5.) 4(-8x + 5) = -32x - 26$$

$$-32x + 20 = -32x - 26$$

$$20 \neq -26$$

\emptyset

$$6.) 2(x-3) = \frac{1}{2}(4x-12)$$

$$\cancel{2x} - 6 = \cancel{2x} - 6$$

$$-6 = -6 \quad \mathbb{R}$$

\mathbb{R}

\emptyset

$$7.) \frac{11}{2}p + 7 = \frac{3}{2}p + 35$$

$$\frac{-3}{2}p \quad \frac{-3}{2}p$$

$$\frac{8}{2}p + 7 = 35$$

$$4p + 7 = 35$$

$$4p = 28$$

$$p = 7$$

$$8.) -2(2t + 3) = -4(t + 1) - 2$$

$$\begin{aligned} -4t - 6 &= -4t - 4 - 2 \\ -6 &= -6 \quad \mathbb{R} \end{aligned}$$

$$9.) \text{ Solve for } \mathbf{B}. \quad A(B - G) + Z = R$$

$$-Z - Z$$

$$A(B - G) = R - Z$$

$$B - G = \frac{R - Z}{A}$$

$$B = \frac{R - Z}{A} + G$$

10.) Solve for **W**. $T = Q(RW - 2L)$

$$\frac{T}{Q} = RW - 2L$$

$$\frac{T}{Q} + 2L = W$$