

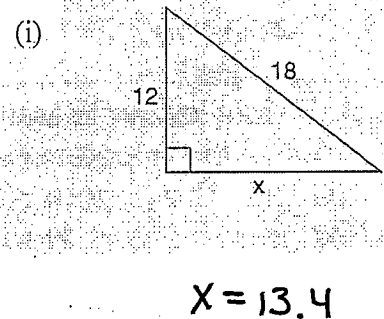
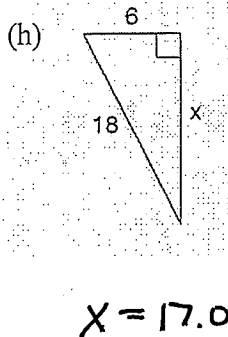
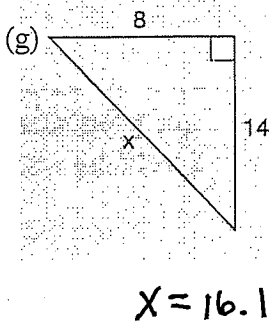
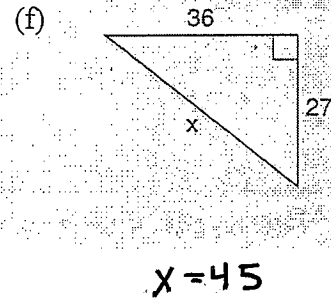
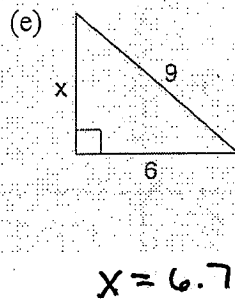
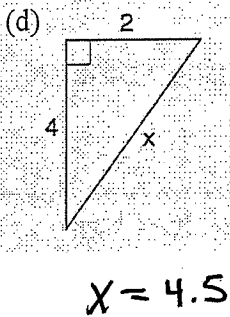
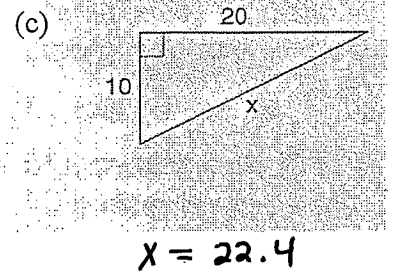
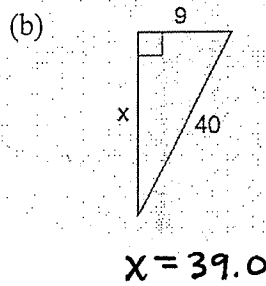
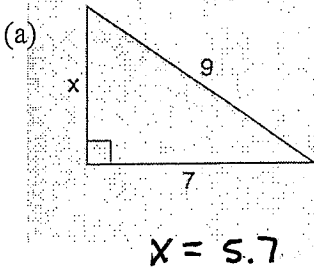
Name: Key

Date: _____

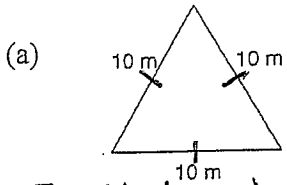
Module 7

- Review of Triangle Properties worksheet

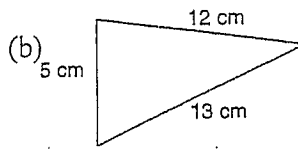
1. Use the Pythagorean Theorem to calculate the length of the missing side. Round your answers to 1 decimal place.



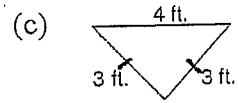
2. Classify each of the following by sides. Draw hash marks (/) to show congruent sides.



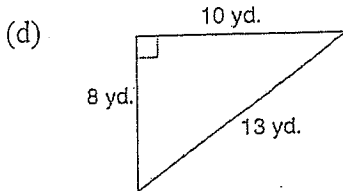
Equilateral



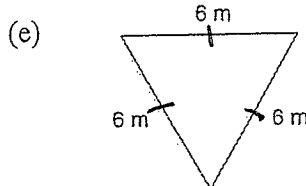
Scalene



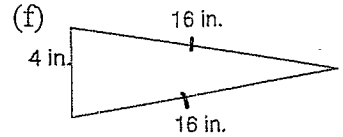
Isosceles



Scalene

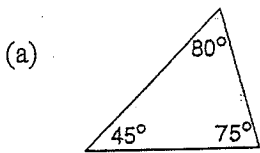


Equilateral

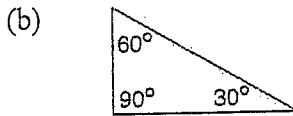


Isosceles

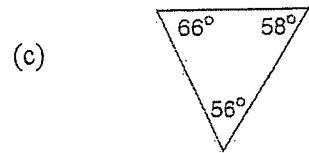
3. Classify each of the following by angles.



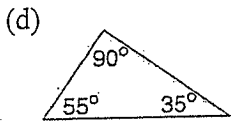
Acute



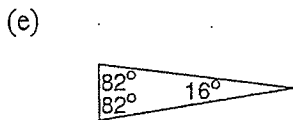
Right



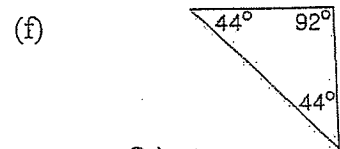
Acute



Right

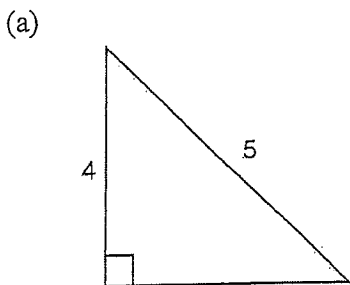


Acute

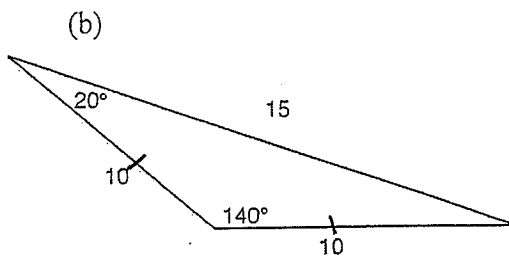


Obtuse

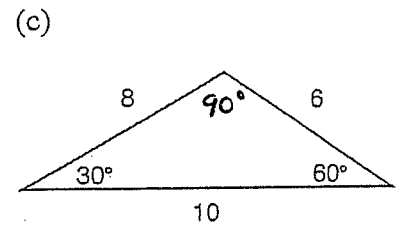
4. Classify each triangle in two ways, by its sides and angles. You may want to calculate any missing angles (if possible).



By sides: Scalene
By angles: Right

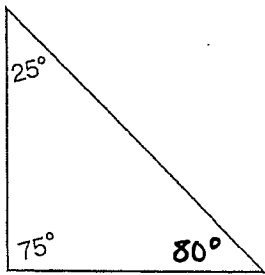


By sides: Isosceles
By angles: Obtuse



By sides: Scalene
By angles: Right

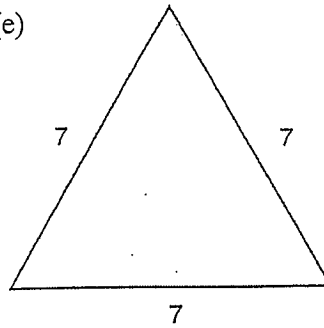
(d)



By sides: **Scalene**

By angles: **Acute**

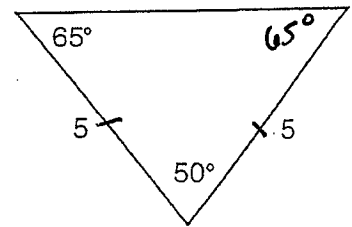
(e)



By sides: **Equilateral**

By angles: **Equiangular**

(f)

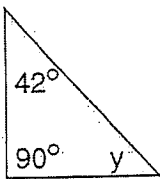


By sides: **Isosceles**

By angles: **Acute**

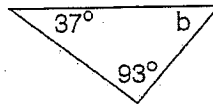
5. Find the measure of the unknown angle:

(a)



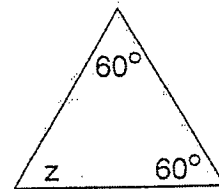
$\angle y = \underline{48^\circ}$

(b)



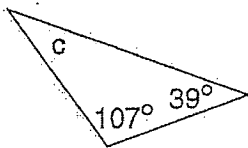
$\angle b = \underline{50^\circ}$

(c)



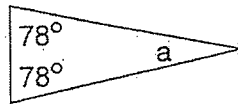
$\angle z = \underline{60^\circ}$

(d)



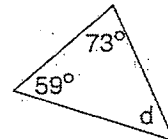
$\angle c = \underline{34^\circ}$

(e)



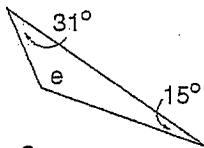
$\angle a = \underline{24^\circ}$

(f)



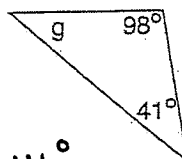
$\angle d = \underline{48^\circ}$

(g)



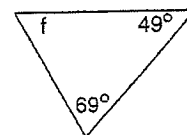
$\angle e = \underline{134^\circ}$

(h)



$\angle g = \underline{41^\circ}$

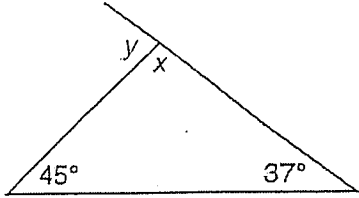
(i)



$\angle f = \underline{62^\circ}$

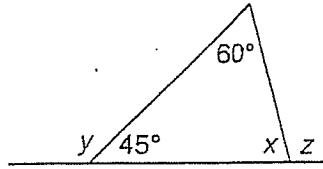
6. Use the Exterior Angle Theorem with Triangle Properties to solve for the missing angles.

(a)



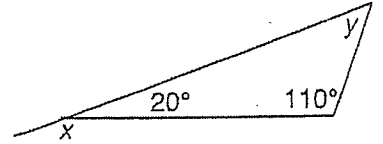
$x = \underline{98^\circ}$ $y = \underline{82^\circ}$

(b)



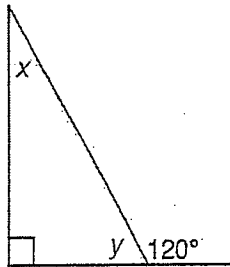
$x = \underline{75^\circ}$ $y = \underline{135^\circ}$
 $z = \underline{105^\circ}$

(c)



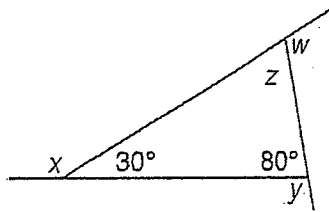
$x = \underline{160^\circ}$ $y = \underline{50^\circ}$

(d)



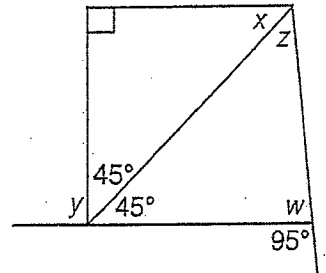
$x = \underline{30^\circ}$ $y = \underline{60^\circ}$

(e)



$w = \underline{110^\circ}$ $x = \underline{150^\circ}$
 $y = \underline{100^\circ}$ $z = \underline{70^\circ}$

(f)



$w = \underline{85^\circ}$ $x = \underline{45^\circ}$
 $y = \underline{90^\circ}$ $z = \underline{50^\circ}$

12/4/12

Worksheet Triangle Inequalities

Name Key

Decide whether each set of numbers is a triangle.

1) 15, 12, 9 yes

2) 23, 16, 7 No

3) 20, 10, 9 No

4) 8.5, 6.5, 13.5 yes

5) 47, 28, 70 yes

6) 28, 41, 13 No

7) 5, 10, 15 No

8) 9, 40, 41 yes

9) 12, 2.2, 14.3 No

10) 6, 9, 16 No

The measures of two sides are given. Between what two numbers must the third side fall:

11) 9 and 15 $\frac{15}{-9}$ $\frac{9}{+15}$ 24

11) Write an inequality to represent your answer: $6 < l < 24$

12) 11 and 20

12) Write an inequality to represent your answer: $9 < l < 31$

13) 23 and 14

13) Write an inequality to represent your answer: $9 < l < 37$

14) 5 and 8

14) Write an inequality to represent your answer: $3 < l < 13$

15) 15 and 18

15) Write an inequality to represent your answer: $3 < l < 33$

16) 22 and 34

16) Write an inequality to represent your answer: $12 < l < 56$

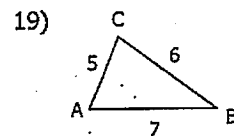
17) 47 and 71

17) Write an inequality to represent your answer: $24 < l < 118$

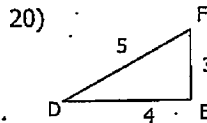
18) 21 and 47

18) Write an inequality to represent your answer: $76 < l < 68$

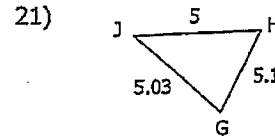
Name the largest and the smallest angle.



largest: $\angle C$; smallest: $\angle B$



$\angle E + \angle D$



$\angle J + \angle G$

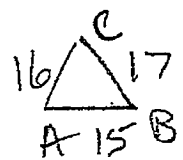
List the angles of $\triangle ABC$ from the smallest to the largest.

22) $\overline{AB} = 17, \overline{BC} = 21, \overline{AC} = 18$

$\angle C, \angle B, \angle A$

23) $\overline{AB} = 15, \overline{AC} = 16, \overline{BC} = 17$

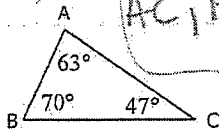
$\angle C, \angle B, \angle A$



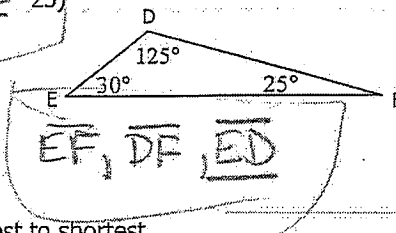
Large to small

List the sides in order, underline the side with the shortest length.

24)

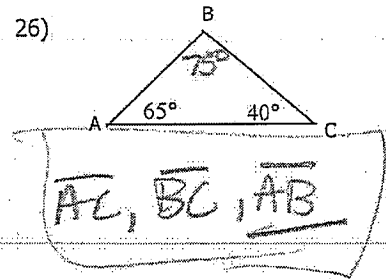


$\overline{AC}, \overline{BC}, \underline{\overline{AB}}$



$\overline{EF}, \overline{DF}, \underline{\overline{ED}}$

26)



$\overline{AC}, \overline{BC}, \underline{\overline{AB}}$

List the sides of $\triangle ABC$ from the longest to shortest.

27) $m\angle A = 46^\circ, m\angle B = 30^\circ$

28) $m\angle C = 101^\circ, m\angle B = 70^\circ$

29) $m\angle A = 59^\circ, m\angle C = 61^\circ$

$m\angle C = 104$

$m\angle A = 9$

$m\angle B = 60^\circ$

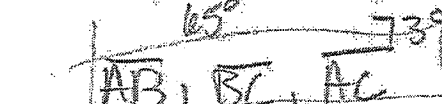
$\overline{AB}, \overline{BC}, \underline{\overline{AC}}$

$\overline{AB}, \overline{AC}, \underline{\overline{BC}}$

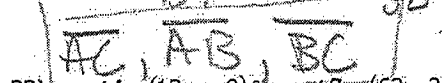
$\overline{AB}, \overline{AC}, \underline{\overline{BC}}$

Find the value of x and list the sides of $\triangle ABC$ in order from shortest to longest if the angles have the indicated measures. (Hint: Find the angle measures first, then decide which sides are the longest)

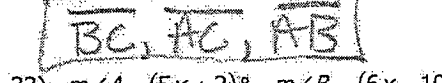
30) $m\angle A = (9x + 29)^\circ, m\angle B = (93 - 5x)^\circ, \text{ and } m\angle C = (10x + 2)^\circ.$ $9x + 29 + 93 - 5x + 10x + 2 = 180$



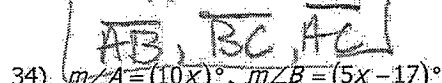
31) $m\angle A = (9x - 4)^\circ, m\angle B = (4x - 16)^\circ, \text{ and } m\angle C = (68 - 2x)^\circ.$ $9x - 4 + 4x - 16 + 68 - 2x = 180$



32) $m\angle A = (12x - 9)^\circ, m\angle B = (62 - 3x)^\circ, \text{ and } m\angle C = (16x + 2)^\circ.$ $12x - 9 + 62 - 3x + 16x + 2 = 180$



33) $m\angle A = (5x + 2)^\circ, m\angle B = (6x - 10)^\circ, \text{ and } m\angle C = (x + 20)^\circ.$ $5x + 2 + 6x - 10 + x + 20 = 180$



34) $m\angle A = (10x)^\circ, m\angle B = (5x - 17)^\circ, \text{ and } m\angle C = (7x - 1)^\circ.$ $10x + 5x - 17 + 7x - 1 = 180$



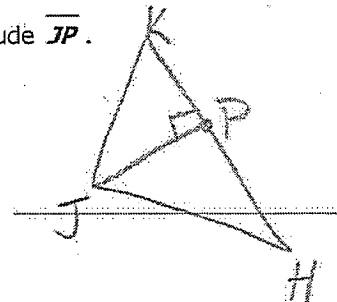
$22x - 18 = 180$ $x = 9$

Answer the following questions.

35) Draw $\triangle DEA$ with a median \overline{EG} .

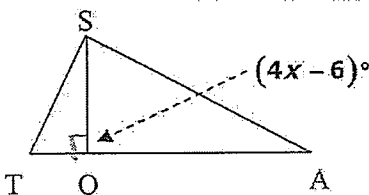


36) Draw $\triangle JKH$ with an altitude \overline{JP} .



37) Find the value of x .

\overline{SO} is an altitude of $\triangle SAT$



$4x - 6 = 90$
 $+6 +6$
 $4x = 96$
 $\frac{4x}{4} = \frac{96}{4}$
 $x = 24$

$x = 24$

Name _____

Geometry

Polygons

Sum of the interior angles of a polygon	$(n - 2)180$
Sum of the exterior angles of a polygon	360°
Each interior angle of a regular polygon	$\frac{(n - 2)180}{n}$
Each exterior angle of a regular polygon	$\frac{360}{n}$

Geometry

NAME: _____

WORKSHEET: *Polygon Angle Measures*

PERIOD: _____ DATE: _____

Use the given information to complete the table. Round to the nearest tenth if necessary.

	# Sides	Interior Angle Sum	Measure of ONE INTERIOR Angle (Regular Polygon)	Exterior Angle Sum	Measure of ONE EXTERIOR Angle (Regular Polygon)
1)	n	$(n-2) \cdot 180$	$\frac{(n-2) \cdot 180}{n}$	360°	$\frac{360}{n}$
2)	14	2160°	154.3°	360°	25.7°
3)	24	3960°	165°	360°	15°
4)	17	2700°	158.8°	360°	21.2°
5)	8	1080°	135°	360°	45°
6)	7	900°	128.6°	360°	51.4°
7)	30	5040°	168°	360°	12°
8)	11	1620°	147.3°	360°	32.7°
9)	12	1800°	150°	360°	30°
10)	6	720°	120°	360°	60°
11)	15	2340°	156°	360°	24°
12)	36	6120°	170°	360°	10°
13)	50	8640°	172.8°	360°	7.2°
14)	4	360°	90°	360°	90°
15)	72	12600°	175°	360°	5°

Find the measure of the variables.

a)

$$x = \underline{128^\circ}$$

b)

$$y = \underline{115^\circ}$$

c)

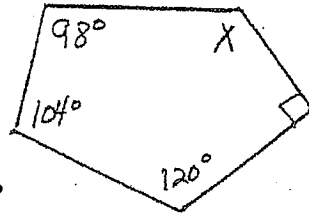
$$m = \underline{43^\circ}$$

d)

$$x = \underline{125^\circ}$$

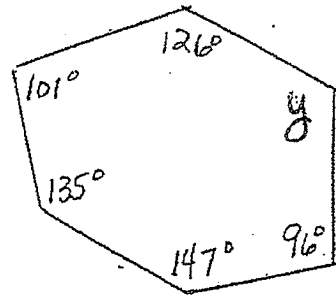
a)

$$(5-2) \cdot 180 \\ 540^\circ \rightarrow$$



b)

$$(6-2) \cdot 180 \\ 720^\circ \rightarrow$$



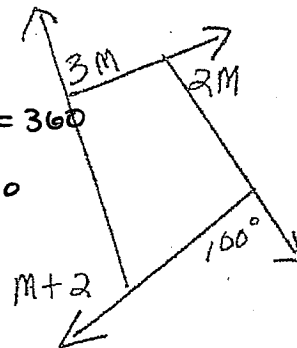
c)

$$3m + 2m + 100 + m + 2 = 360$$

$$6m + 102 = 360$$

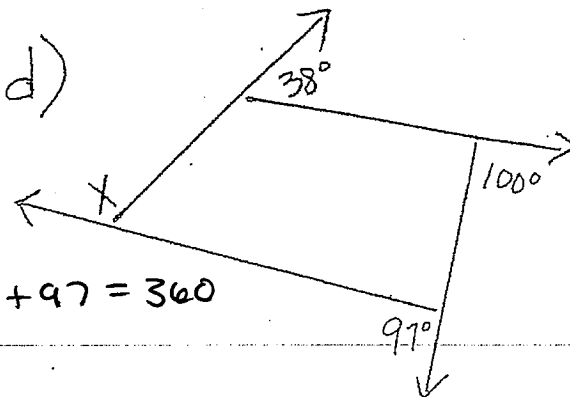
$$6m = 258$$

~~m~~



d)

$$x + 38 + 100 + 97 = 360$$



- 4) The sum of the interior angles of a polygon is 1620° . How many sides does it have?

$$\frac{1620}{180} = 9 + 2 = \boxed{11 \text{ sides}}$$

- 5) Can the interior angles of a polygon have a sum between 4300° and 4400° ?
If so, how many sides can it have?

$$\frac{4300}{180} \neq ? \quad \frac{4400}{180} \neq ?$$

- 6) The measure of the interior angle of a regular polygon is 179° . How many sides does it have?

$$n = 360$$

- 7) Is it possible for a regular polygon to have each of its interior angles measure 142° ?
Support your answer.

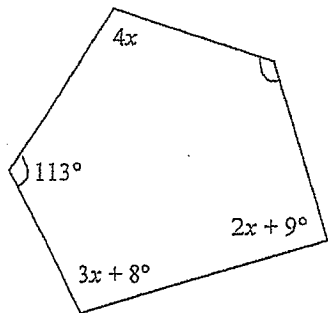
$$180n - 360 = 142n$$

$$38n = 360$$

$$n = 9.47, \dots$$

NO

- 8) Find the value of x in the figure given.



$$(5-2) \cdot 180 = 540$$

$$4x + 113 + 3x + 8 + 2x + 9 + 113 = 540$$

$$9x + 243 = 540$$

$$9x = 297$$

$$\boxed{x = 33}$$