Geometry
Unit 2 Agenda - Similar Figures PACKET #1

Name: _____

DATE	DAY	LESSON	PAGES	HOMEWORK
FRI 8/19	2.1	Prerequisite Skills	2	
MON 8/22		**HALF DAY -** Practice Activity		
TUES 8/23	2.2	Parallel Lines Cut by a Transversal Intro	3 – 6	DeltaMath 2.1 Due 9/1
WED 8/24	2.3	Parallel Lines Cut by a Transversal, Day 2 Activity	7 – 10	
THURS 8/25	---	**MATH INVENTORY**		
FRI 8/26	2.4	Ticket to the Party GLOW-IN-THE-DARK TRANSVERSAL PARTY!	--------	
MON 8/29	2.5	Intro to Similarity	11 – 12	
TUES 8/30	2.6	Intro to Similarity, Day 2	13 – 14	
WED 8/31	2.7	Review for Quiz!	15 – 16	Finish Quiz Review & DM!
THURS 9/1	2.8	**QUIZ** – Transversals & Similarity	--------	
FRI 9/2	2.9	Triangle Similarity		DeltaMath 2.2 due 9/12
MON 9/5	----	**LABOR DAY**		
TUES 9/6	2.10	Triangle Similarity, Day 2		
WED 9/7	2.11	Triangle Similarity Application		
THURS 9/8	2.12	Algebraic & Similarity Proofs		
FRI 9/9	2.13	Math Libs! Quiz Review!		Finish Quiz Review & DM
MON 9/12	2.14	**QUIZ** – Similar Triangles		DeltaMath 2.3 due 9/19
TUES 9/13	2.15	Proportional Parts and Midsegments		
WED 9/14	2.16	Triangle Bisector Theorem & Right Triangle Similarity Theorem		
THURS 9/15	2.17	Test Review Activity		
FRI 9/16	2.18	4-3-2-1 Test Review		Finish Test Review & DM
MON 9/19	2.19	**TEST TODAY!!!! GOOD LUCK!!!**		

Agenda is subject to change!!!

Geometry DAY 2.1   Name: _____

Prerequisite Skills   Date: _____

SOLVING LINEAR EQUATIONS – solve for x.

1. $7x - 2 = 12$ 2. $2x - 8 = 4x + 12$ 3. $2(3x + 1) = 2x - 2$

SOLVING PROPORTIONS – solve for x.

4. $\dfrac{x}{3} = \dfrac{12}{4}$ 5. $\dfrac{10}{2} = \dfrac{x-2}{12}$ 6. $\dfrac{x-8}{5} = \dfrac{x-6}{6}$

COMPLIMENTARY, SUPPLEMENTARY, & CONGRUENT ANGLES – solve for x.

_____ **Angles:** Two angles whose sum is 90 degrees.

_____ **Angles:** Two angles whose sum is 180 degrees.

_____ **Angles:** Two or more angles with the same measure.

7. Solve for x if $\angle 1$ and $\angle 2$ are complimentary. Then find each angle measure.
   $\angle 1 = x - 7$
   $\angle 2 = 4x + 2$

8. Solve for x if $\angle 1$ and $\angle 2$ are supplementary. Then find each angle measure.
   $\angle 1 = 10x - 1$
   $\angle 2 = 7x + 11$

9. Solve for x if $\angle 1$ and $\angle 2$ are congruent. Then find each angle measure.
   $\angle 1 = 2x + 1$
   $\angle 2 = 6x - 7$

Name: _____

Angle Pairs Created by Parallel Lines Cut by a Transversal

Vocabulary

• _____ - A line that crosses parallel lines to create pairs of congruent and supplementary angles

• _____ - Having the same measurement

• _____ - Angles that add up to 180°

Angle Pairs in Parallel Lines Cut by a Transversal

Exterior   Exterior

Interior   Interior

Exterior   Exterior
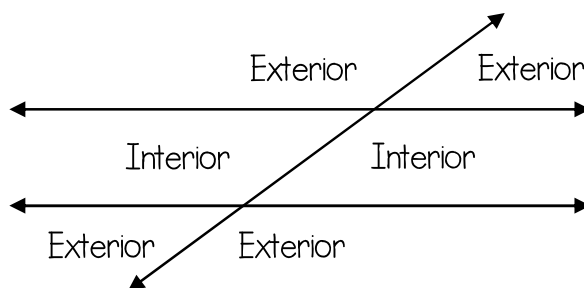
• _____ - Angles that lie on the same side of the transversal and on the same side of the parallel lines. These angles are in the same "corner" and are congruent
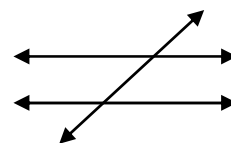
• _____ - Angles on opposite sides of the transversal and inside the two parallel lines. These angles are congruent
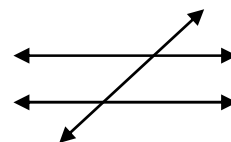
• _____ - Angles on opposite sides of the transversal and outside the parallel lines. These angles are congruent
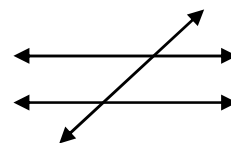
• _____ - Angles on the same side of the transversal and inside the parallel lines. These angles are supplementary
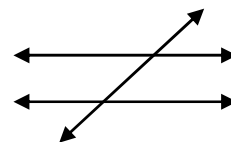
• _____ - Angles on the same side of the transversal and outside the parallel lines. These angles are supplementary
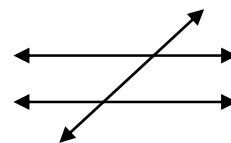
• _____ - Angles that are across from each other and are formed by any intersecting lines (not just parallel lines and transversals). These angles are congruent.

Name: _____

Date: _____
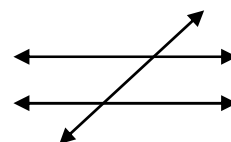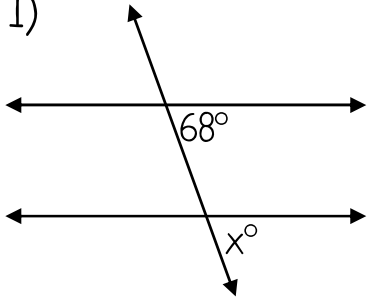
Match the word with the correct diagram! Options may be used more than once!

A. Alternate Interior Angles	D. Alternate Exterior Angles
B. Same Side Interior Angles	E. Same Side Exterior Angles
C. Corresponding Angles	F. Vertical Angles
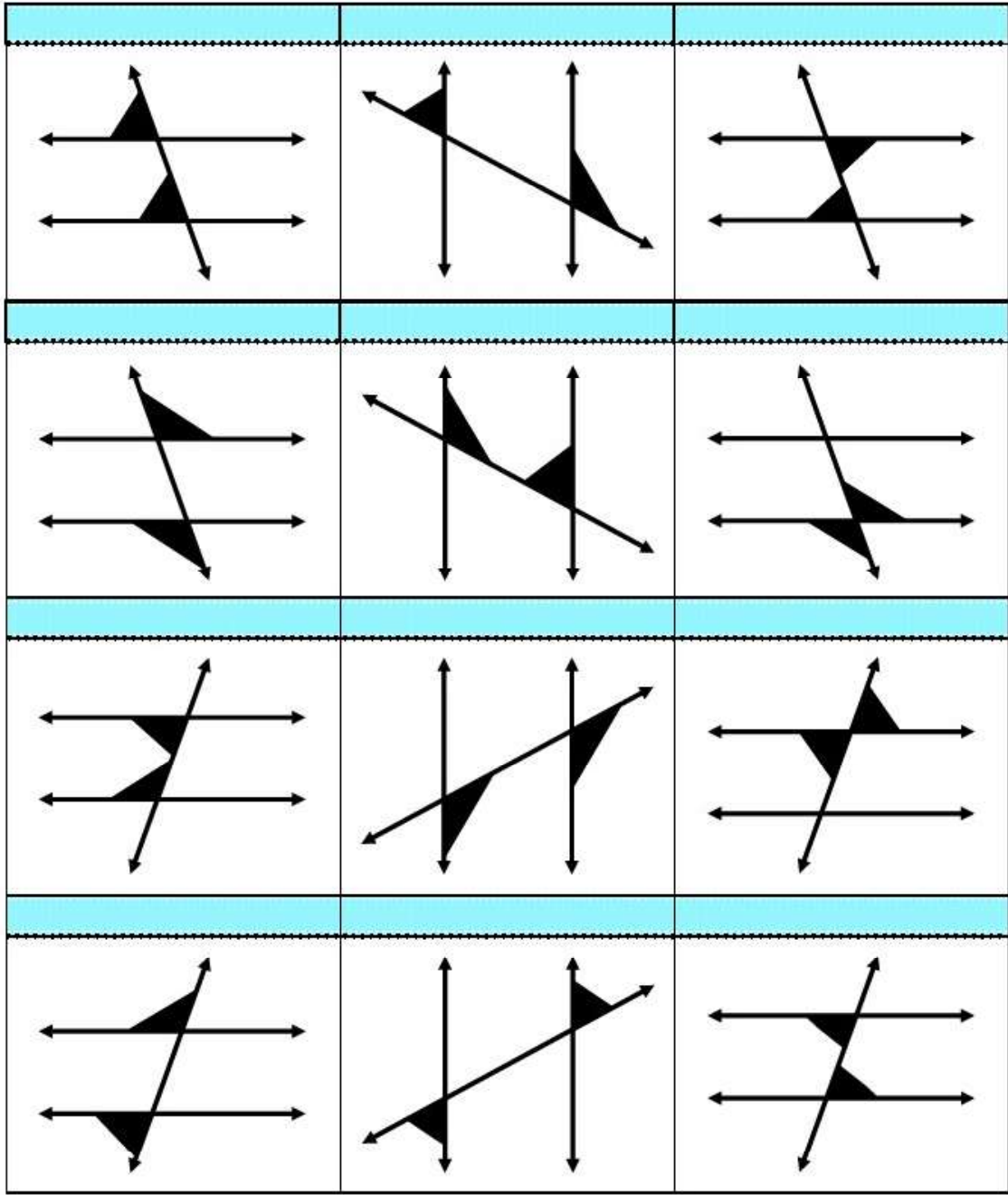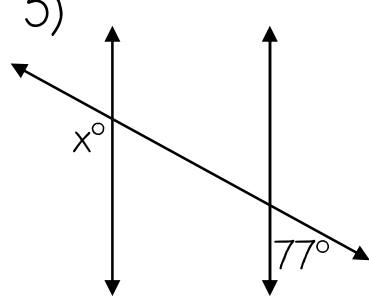
Angle Pairs Created by Parallel Lines Cut by a Transversal
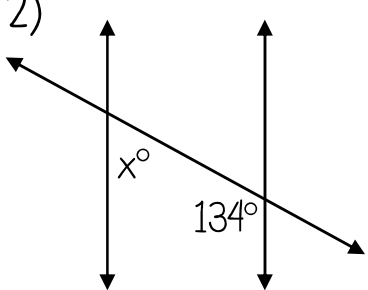
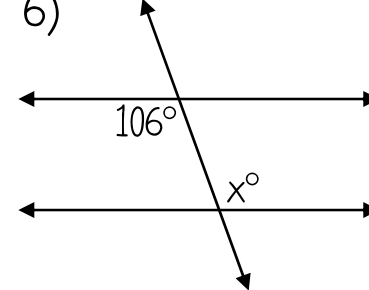_For each set of angles name the angle pair and find the missing measurement_

1)
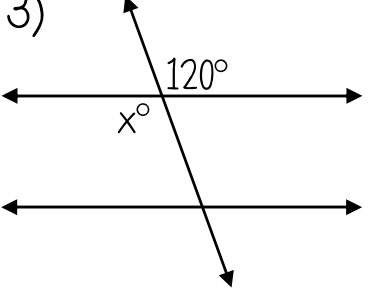
68°

x°

Type of angle pair

_____

These angles are

_____

so….x=_____

2)

x°

134°

Type of angle pair

_____

These angles are

_____

so….x=_____

3)

120°

x°

Type of angle pair

_____

These angles are

_____

so….x=_____

4)

101°

x°

Type of angle pair

_____

These angles are

_____

so….x=_____

5)

x°

77°

Type of angle pair

_____

These angles are

_____

so….x=_____

6)

106°

x°

Type of angle pair

_____

These angles are

_____

so….x=_____

7)

74°

x°

Type of angle pair

_____
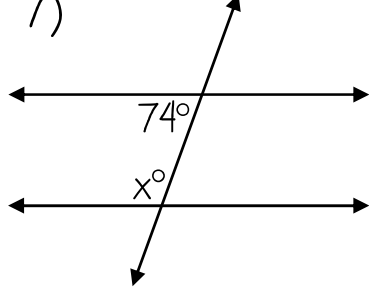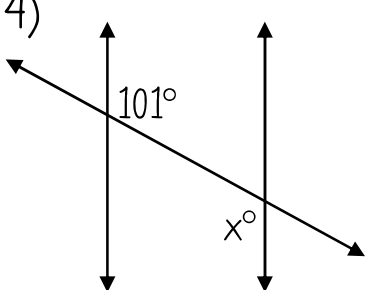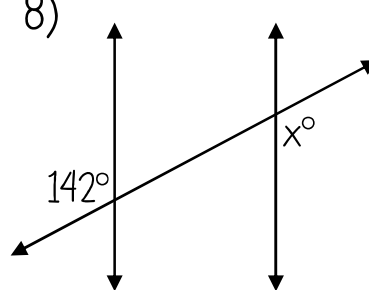
These angles are

_____

so….x=_____

8)

142°

x°

Type of angle pair

_____

These angles are

_____

so….x=_____

Angle Pairs Created by Parallel Lines Cut by a Transversal

For each set of angles name the angle pair, write the equation, solve the equation for x, and plug in x to find the missing angle measurements

1)
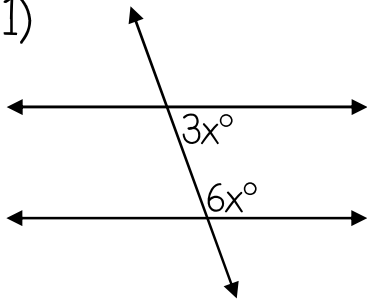
$3x°$

$6x°$

Type of angle pair _____

These angles are _____

Equation _____

x=_____

Angle Measurements= _____

Show your work

2)
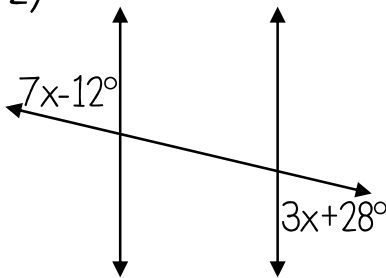
$7x-12°$

$3x+28°$

Type of angle pair _____

These angles are _____

Equation _____

x=_____

Angle Measurements= _____

Show your work

3)
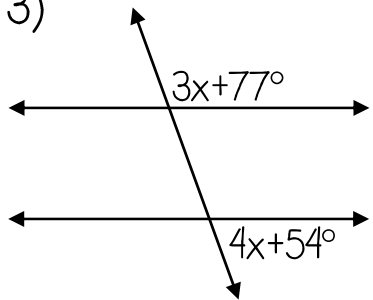
$3x+77°$

$4x+54°$

Type of angle pair _____

These angles are _____

Equation _____

x=_____

Angle Measurements= _____

Show your work

4)
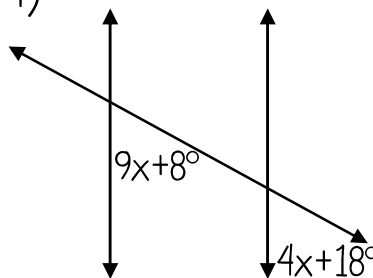
$9x+8°$

$4x+18°$

Type of angle pair _____

These angles are _____

Equation _____

x=_____

Angle Measurements= _____

Show your work

Geometry DAY 2.3

Name: _____

Find the measure of every angle!

m<5 = 114 degrees

$l \parallel m$
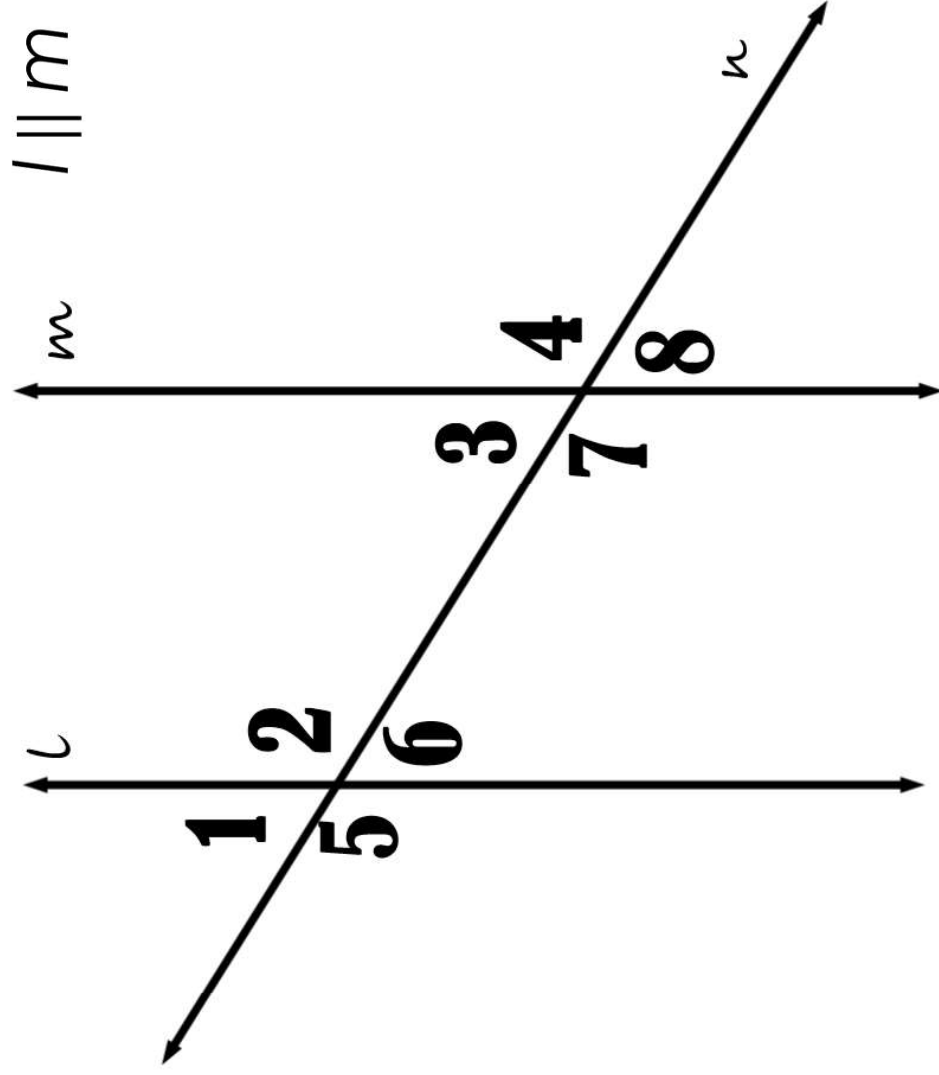
Parallel Lines Cut by Transversal: Angle Pairs

1   2

3   4

Parallel Lines
(never touch)

5   6

7   8

Transversal
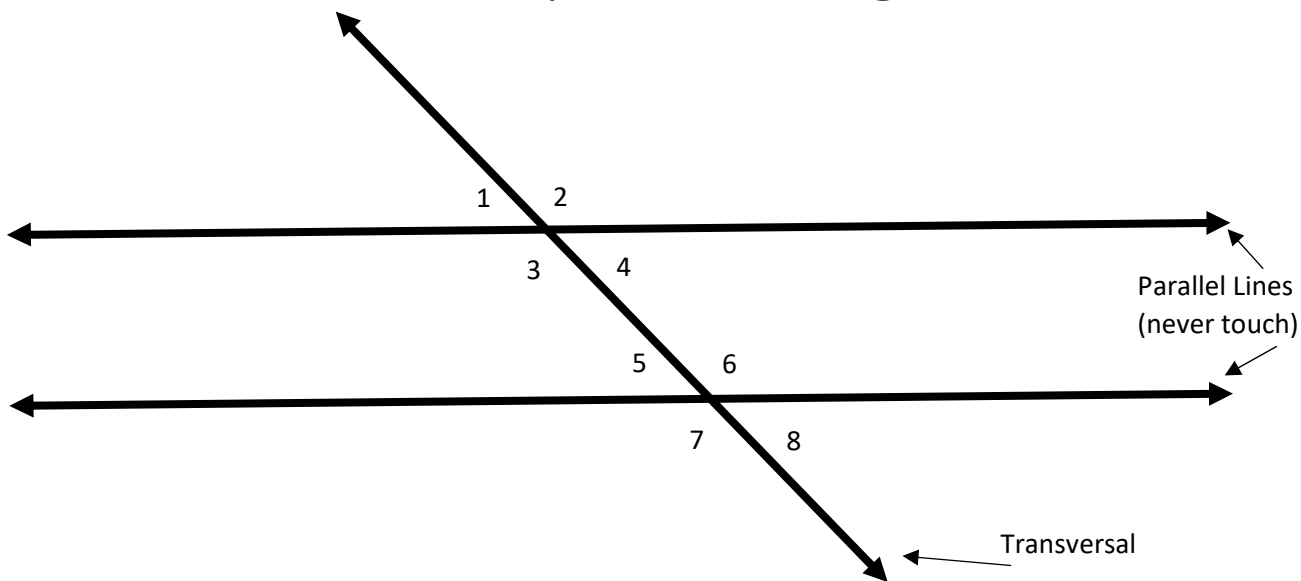
CONGRUENT ANGLES (= to each other)			
Corresponding Angles	Alternate Interior Angles	Alternate Exterior Angles	Vertical Angles
∠1 ≅ ∠5	∠3 ≅ ∠6	∠1 ≅ ∠8	∠1 ≅ ∠4
∠3 ≅ ∠7	∠4 ≅ ∠5	∠2 ≅ ∠7	∠2 ≅ ∠3
∠2 ≅ ∠6			∠5 ≅ ∠8
∠4 ≅ ∠8			∠6 ≅ ∠7

SUPPLEMENTARY ANGLES (= to 180)		
Same Side Interior Angles	Same Side Exterior Angles	Linear Pairs
∠3 ≅ ∠5	∠1 ≅ ∠7	∠1 ≅ ∠2
∠4 ≅ ∠6	∠2 ≅ ∠8	∠1 ≅ ∠3
		∠2 ≅ ∠4
		∠3 ≅ ∠4
		∠5 ≅ ∠6
		∠5 ≅ ∠7
		∠6 ≅ ∠8
		∠7 ≅ ∠8

Parallel Lines & Transversals ~ Missing Angle Maze!

Directions: Each diagram is formed by two parallel lines and a transversal. Find the value of x. Use your answers to navigate through the maze. **SHOW ALL STEPS!**
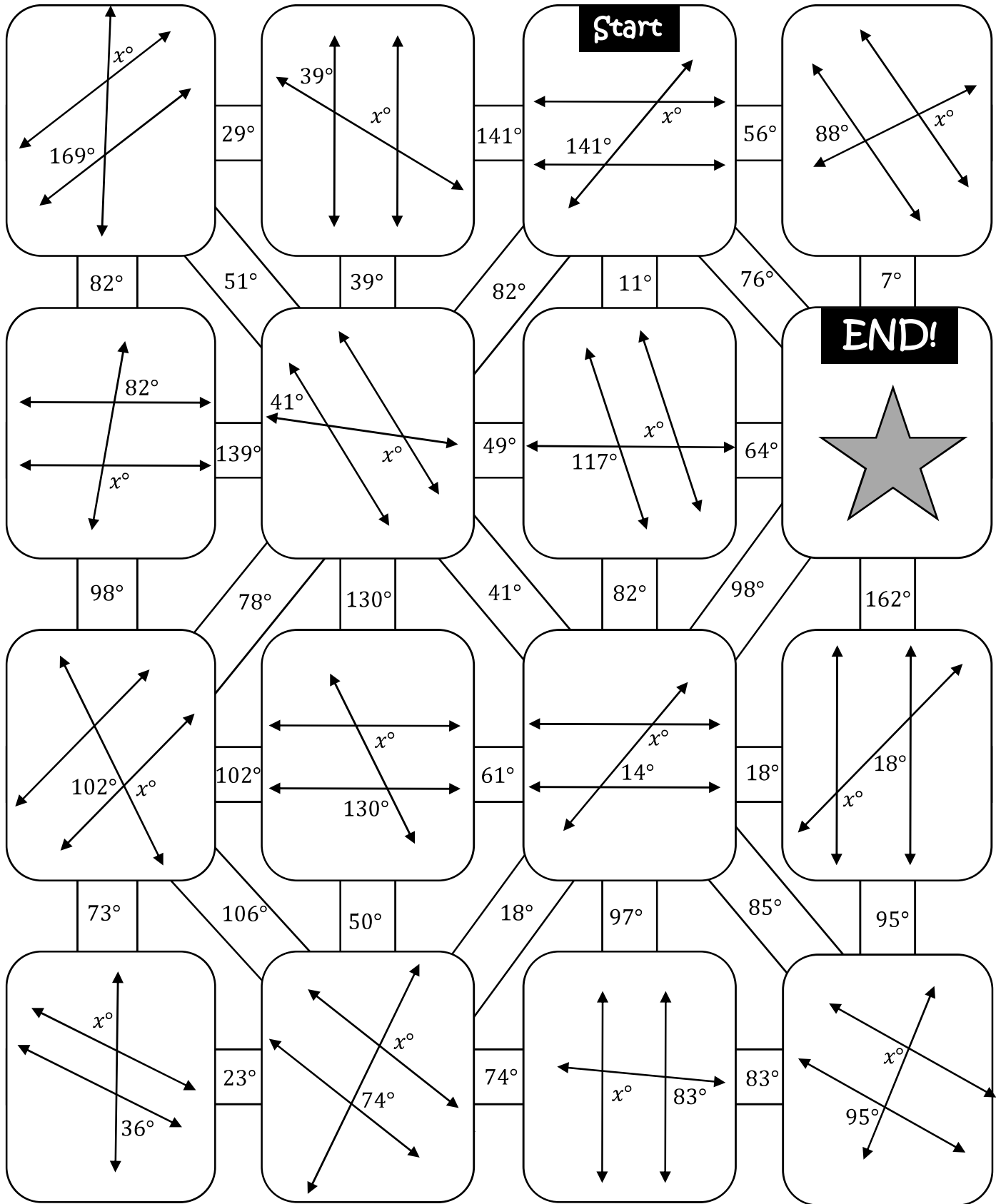
Parallel Lines & Transversals ~ Solving Equations Riddle!

Directions: Each diagram is formed by two parallel lines and a transversal. Find the value of x. Then write the letter above the line that the answer corresponds to.

| What do you call a sleeping bull? |

___ ___ ___ ___ ___ ___ ___ ___ ___ ___
11   26   18   37   37   5   20   33   8   19

O

$5x°$ $4x°$

L

$2x°$

$(3x - 5)°$

B

$(3x - 1)°$

$77°$

R

$(5x + 9)°$

$104°$

A

$40°$

$(10x + 30)°$

Z

$2x°$

$(48 + 2x)°$

U

$(2x + 23)°$

$(7x - 5)°$

E

$(12x - 6)°$

D

$36°$

$(11x - 19)°$

Geometry – DAY 2.5   **Name** _____

Similar Polygons   **Date** _____

Two polygons are similar if and only if

➤ _____

➤ _____

The symbol _____ is read "is similar to".

The two rectangles are similar because all corresponding angles measure 90 degrees. All corresponding sides have a ratio of 2/1.

ABCD ~ EFGH

$\angle A \cong$ _____

$\angle B \cong$ _____

$\angle C \cong$ _____

$\angle D \cong$ _____
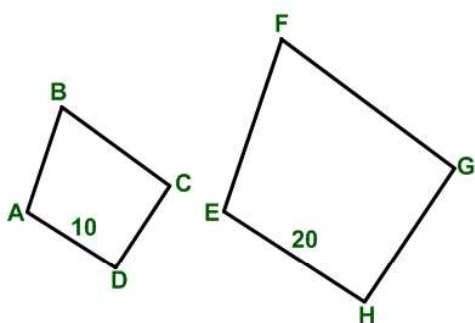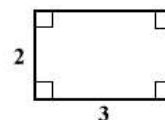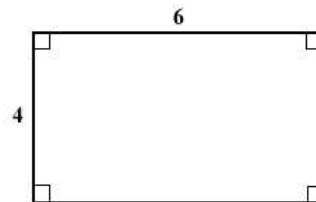
$$\frac{AB}{FG} = \frac{BC}{GH} = \frac{CD}{EH} = \frac{}{}$$

The ratio of polygon ABCD to polygon EFGH is _____.

Given WXYZ ~ HIJK

1. m<H = _____

2. m<J = _____

3. m<X = _____

4. If m<Z = 110°, then m<K = _____

5. The ratio of quad. WXYZ to quad HIJK is _____

6. HK = _____   7. XY = _____   8. HI = _____
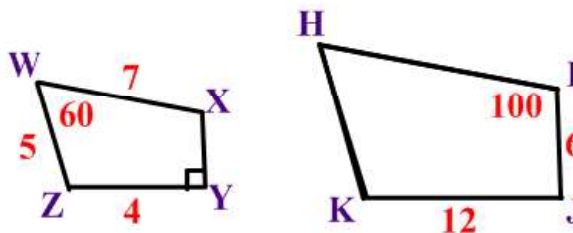
Solve for x.
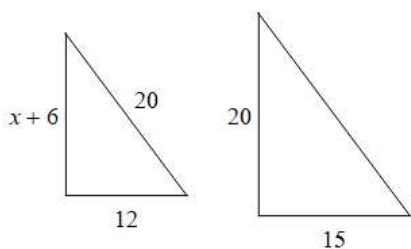
9. x = _____   10. x = _____
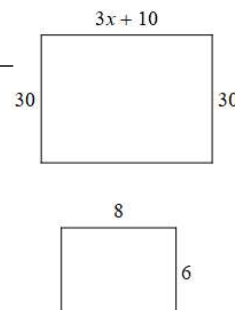
Classwork PRACTICE

Given $\triangle CAT \sim \triangle DOG$.

1. Corresponding angles are congruent.

$\angle C \cong \angle$ _____ $\angle T \cong \angle$ _____ $\angle A \cong \angle$ _____

2. Corresponding sides are proportional. $\dfrac{CA}{\Box} = \dfrac{\Box}{OG} = \dfrac{CT}{\Box}$

3. Pentagon ABCDE is similar to Pentagon JYTQP. Complete the following.

$\angle E \cong \angle$ _____ $\dfrac{AB}{JY} = \dfrac{CD}{\Box}$ _____ $\dfrac{AB}{CD} = \dfrac{JY}{\Box}$ _____

$\angle T \cong \angle$ _____ $\dfrac{TQ}{CD} = \dfrac{PJ}{\Box}$ _____ $\dfrac{CD}{DE} = \dfrac{TQ}{\Box}$ _____
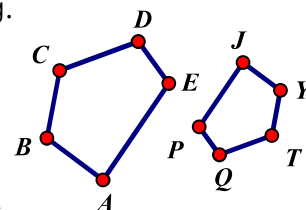
4. The two figures in each question are similar. Create the similarity statement from the diagram.

a) Pentagon ABCDE ~ _____
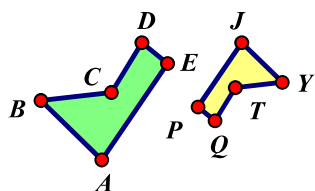
b) $\triangle ABC \sim \triangle$ _____
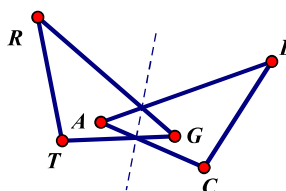
Find the missing side.

5.
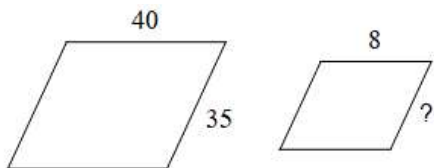
6.
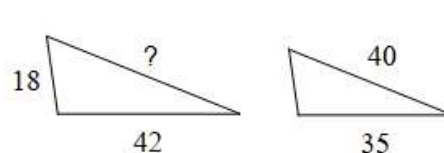
Now what about these?

1. x = _____

2. x = _____

3. x = _____

4. x = _____

Name_____

Intro to Similarity, Day 2

Date_____ Period_____
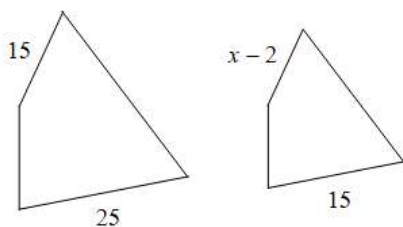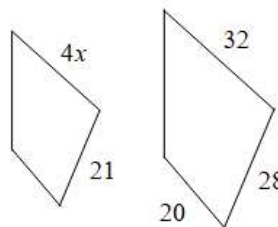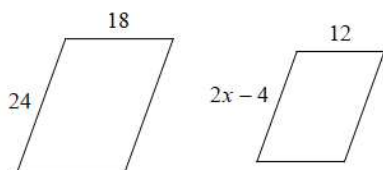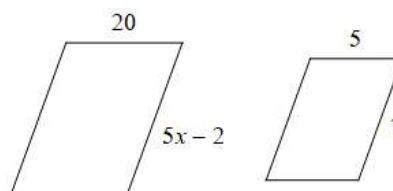
State if the polygons are similar.

1)
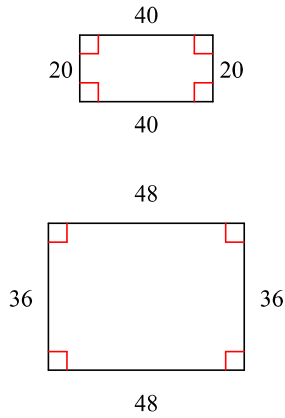
2)
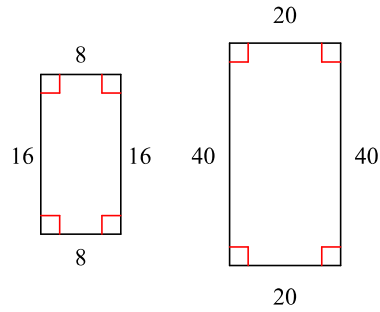
The polygons in each pair are similar. Find the missing side length.

3)
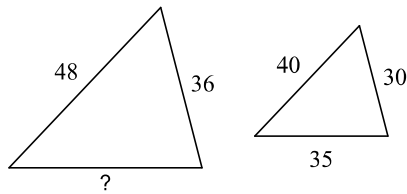
4)
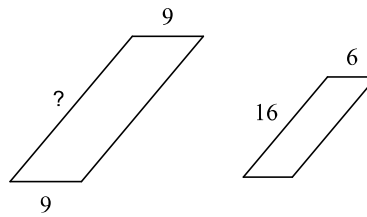
5)

6)
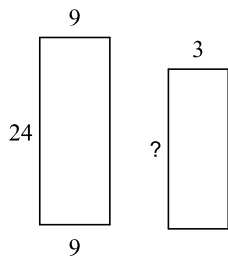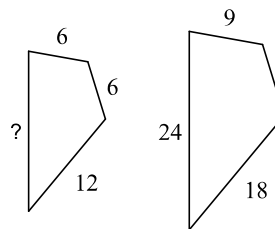
Solve for *x*. The polygons in each pair are similar.

7)
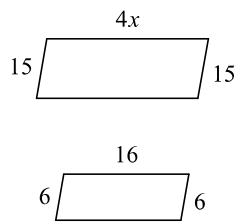
8)
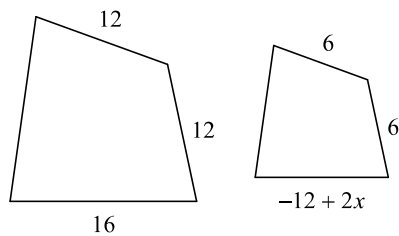
9)
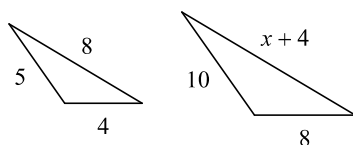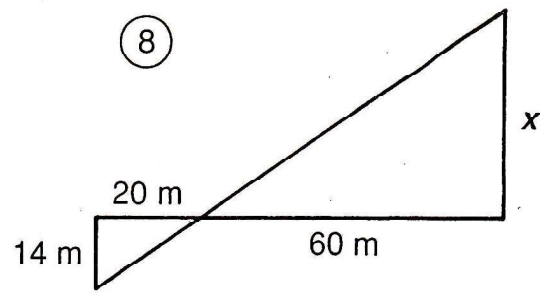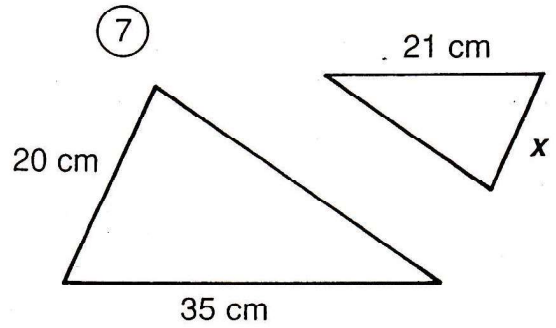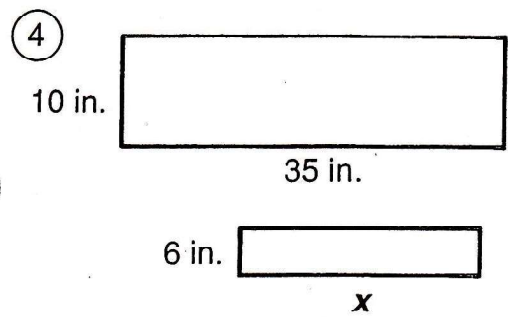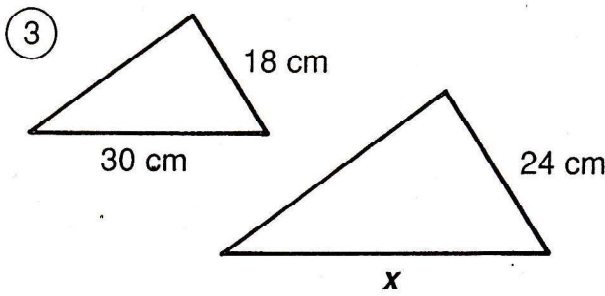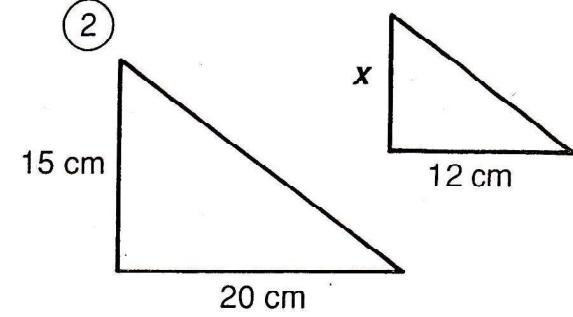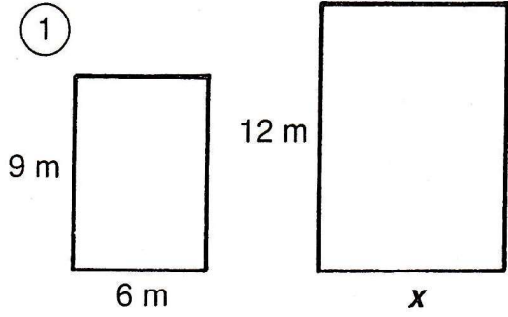

10)
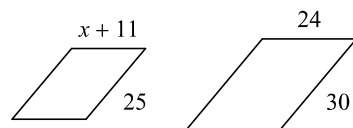
What Is a Termite's Favorite Breakfast?

For each pair of similar figures, find the length **x**. Cross out the letter next to your answer. When you finish, the answer to the title question will remain.
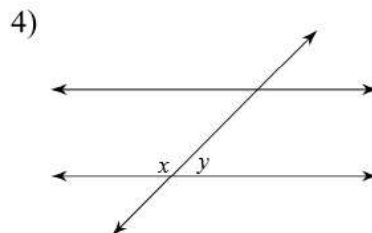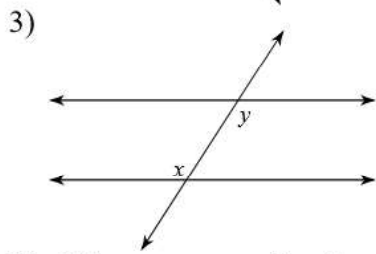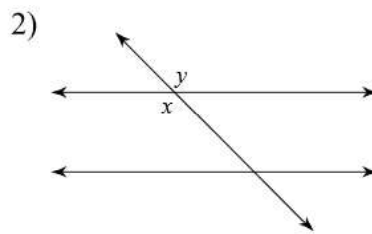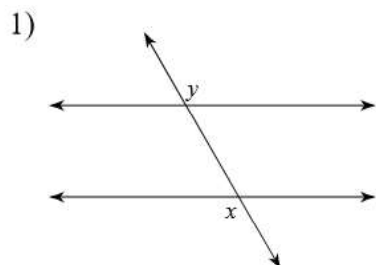
E	9 cm
L	14 cm
T	15 ft
A	20 m
G	50 in.
G	8 m
E	24 in.
S	12 cm
M	16 ft
K	46 m
D	21 in.
A	44 cm
C	10 cm
O	18 m
O	48 in.
F	40 cm
W	42 m

① 9 m, 6 m, 12 m, x

② 15 cm, 20 cm, x, 12 cm

③ 18 cm, 30 cm, 24 cm, x

④ 10 in., 35 in., 6 in., x

⑤ 36 in., 72 in., 25 in., x

⑥ 30 m, 25 m, x, 15 m

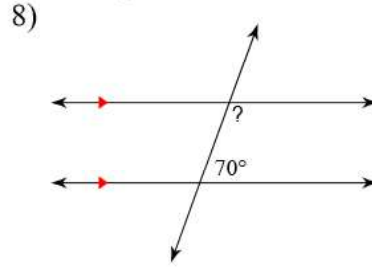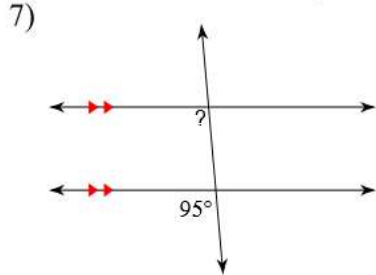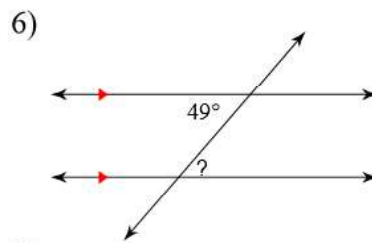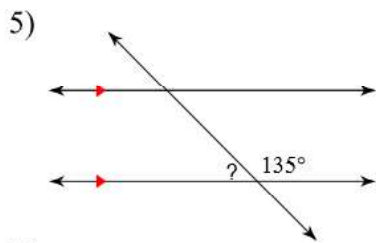⑦ 21 cm, 20 cm, x, 35 cm

⑧ 20 m, 14 m, 60 m, x
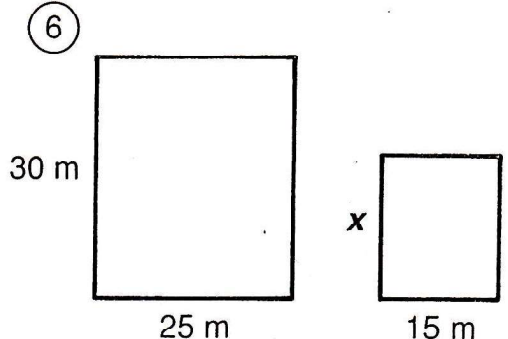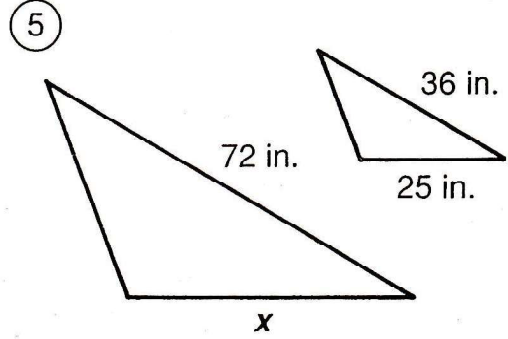
⑨ A flagpole casts a shadow 10 ft long. If a man 6 ft tall casts a shadow 4 ft long at the same time of day, how tall is the flagpole?

⑩ A photograph is 25 cm wide and 20 cm high. It must be reduced to fit a space that is 8 cm high. Find the width of the reduced photograph.
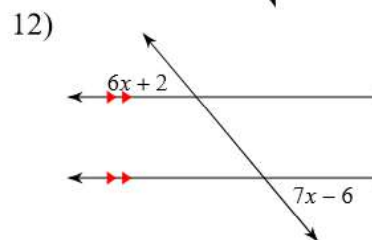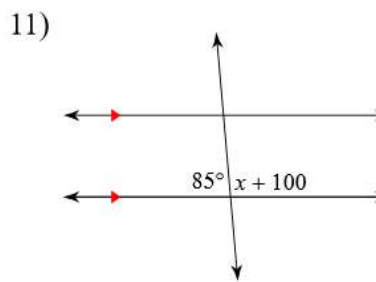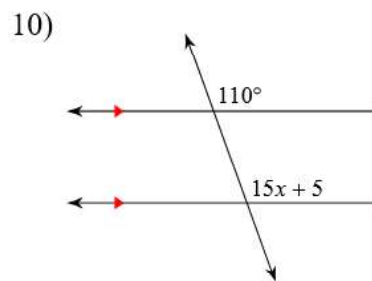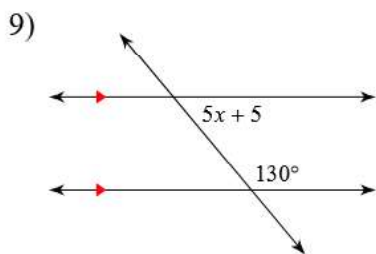
Identify each pair of angles as corresponding, alternate interior, alternate exterior, same-side interior, vertical, or adjacent.
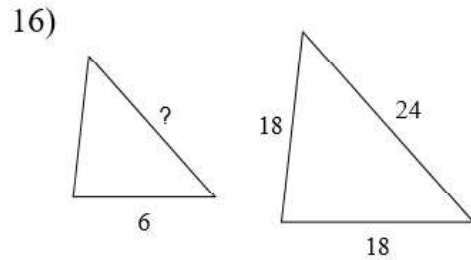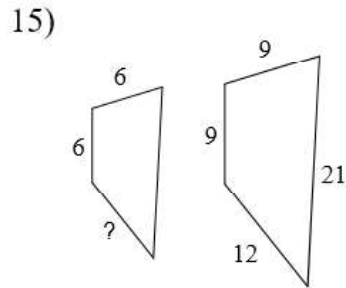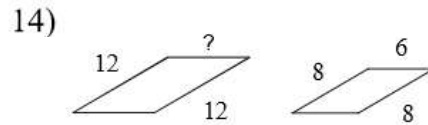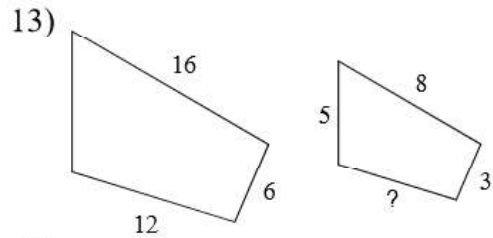
1)

2)

3)

4)

Find the measure of each angle indicated.

5)

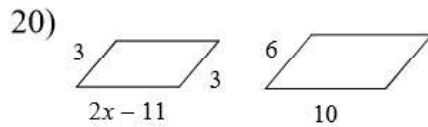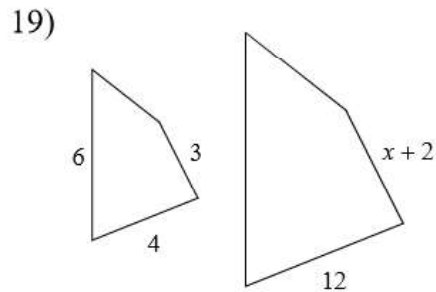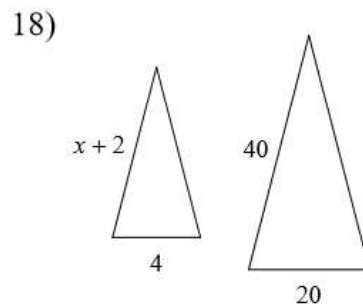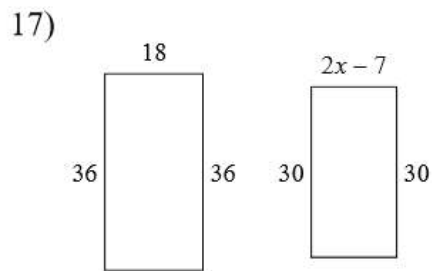135°   ?

6)

49°

?

7)

?

95°

8)

?

70°

Solve for x.

9)

5x + 5

130°

10)

110°

15x + 5

11)

85° x + 100

12)

6x + 2

7x − 6

The polygons in each pair are similar. Find the missing side length.

13)

14)

15)

16)

Solve for x. The polygons in each pair are similar.

17)

18)

19)

20)

21. Triangle JDT ~ Triangle WNP. Find all the corresponding parts.

$\angle J \cong$ _____ $\angle D \cong$ _____ $\angle T \cong$ _____

$\overline{JD} \sim$ _____ $\overline{DT} \sim$ _____ $\overline{JT} \sim$ _____

22. If the measure of <6 is 71 degrees, find the measures of the rest of the angles.