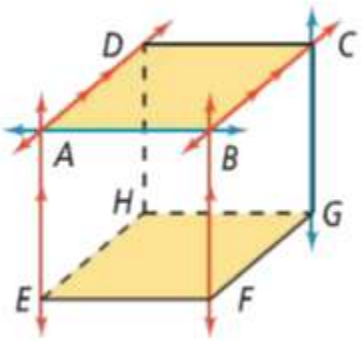
NAME:_____

3.1 Lines and Angles

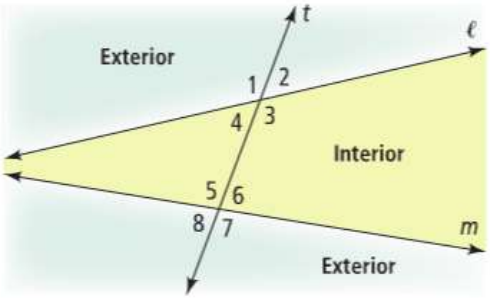
Parallel Lines:

Skew Lines:

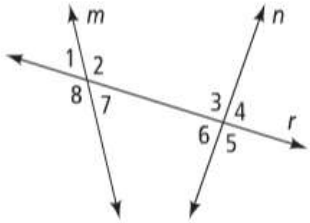
Parallel Planes:



Transversal:



Alternate Interior Angles:



Same-side Interior Angles:

Corresponding Angles:

Alternate Exterior Angles:

TRY THESE: Draw the picture and answer the questions.

Summary:

_____

_____

_____

_____

3.1 Practice Problems

Directions: Use the diagram to name each of the following. Assume that lines and planes that appear to be parallel are parallel.

1) a pair of parallel planes

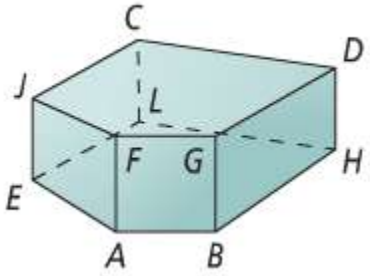
2) all lines that are parallel to $\overleftrightarrow{AB}$

3) all lines that are parallel to $\overleftrightarrow{DH}$

4) two lines that are skew to $\overleftrightarrow{EJ}$

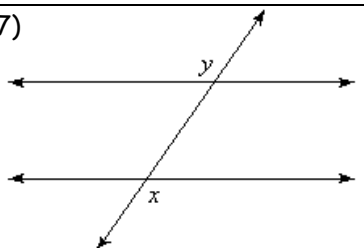
5) all lines that are parallel to plane JFAE

6) a plane parallel to $\overleftrightarrow{LH}$

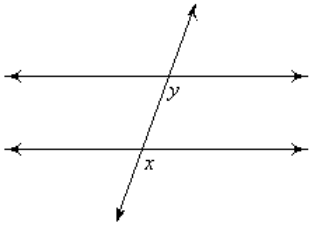


Directions: Identify each pair of angles as corresponding, alternate interior, alternate exterior, or same-side interior.

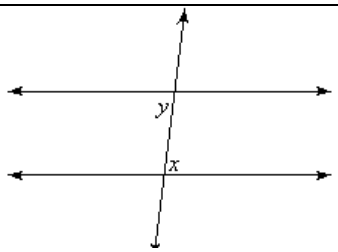
7)



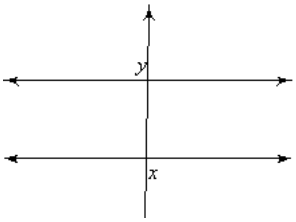
8)



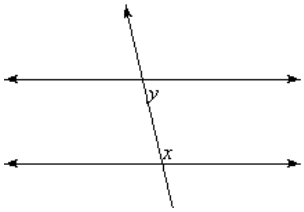
9)



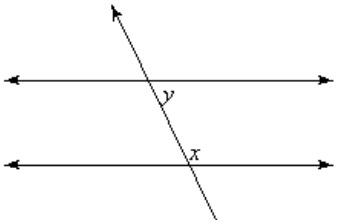
10)



11)



12)



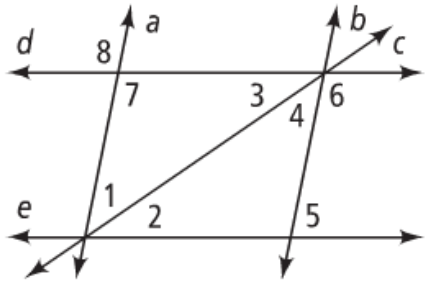
Directions: Identify all pairs of each type of angles in the diagram. Name the two lines and the transversal that form each pair.

13) corresponding angles

14) alternate interior angles

15) alternate exterior angles

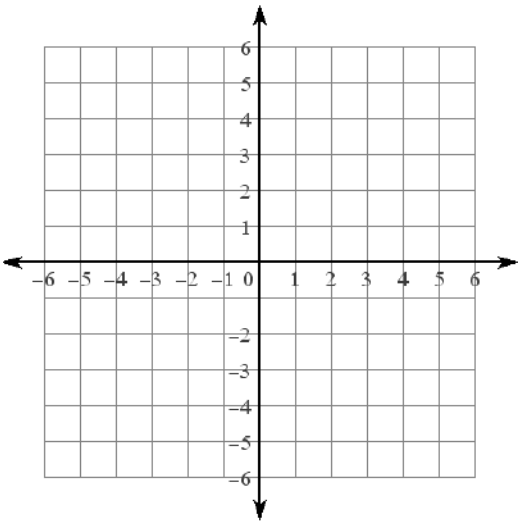
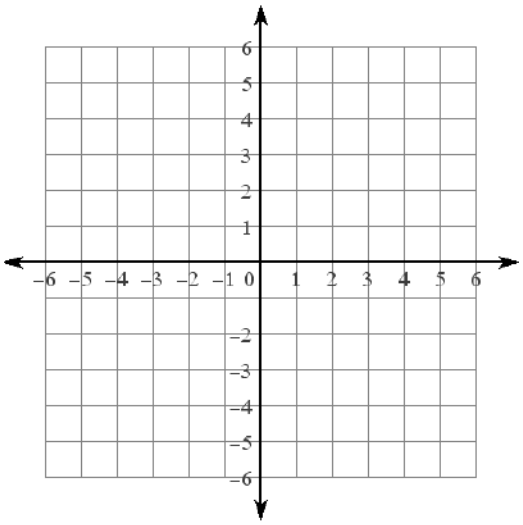
16) same-side interior angles



Directions: Determine whether each statement is always, sometimes or never true.

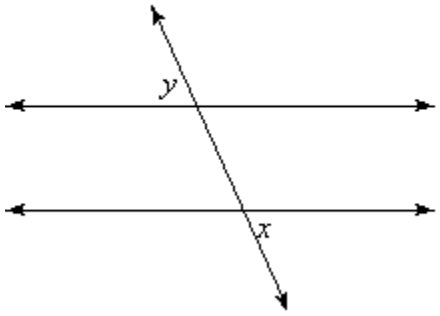
17) Two parallel lines are coplanar	18) Two skew lines are coplanar
19) Two planes that do not intersect are parallel	20) Two lines in intersecting planes are skew
21) A line and a plane that do not intersect are skew	22) Alternate interior angles are on the same side of a transversal

Algebra Review

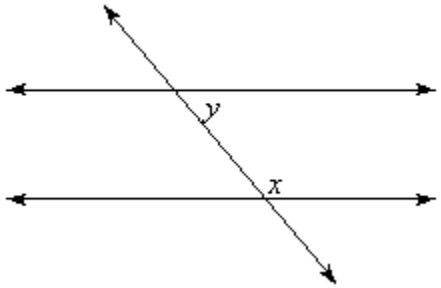
Solve: $-4 = \frac{x}{5} - 8$	Solve: 4x + 3 = 17	Factor: $k^2 + 7k - 30$
Factor: $-7x^7 - 28x^2 + 42x$	Graph: $y = -\frac{5}{2}x - 2$ 	Graph: $y = \frac{5}{2}x - 4$ 

3.1 APPLICATION and EXTENSION

1) What type of angles are these?



2) What type of angles are these?



3) Graph the lines y = x -1 and y = x + 2 .

4) What type of relationship is there between the two lines?

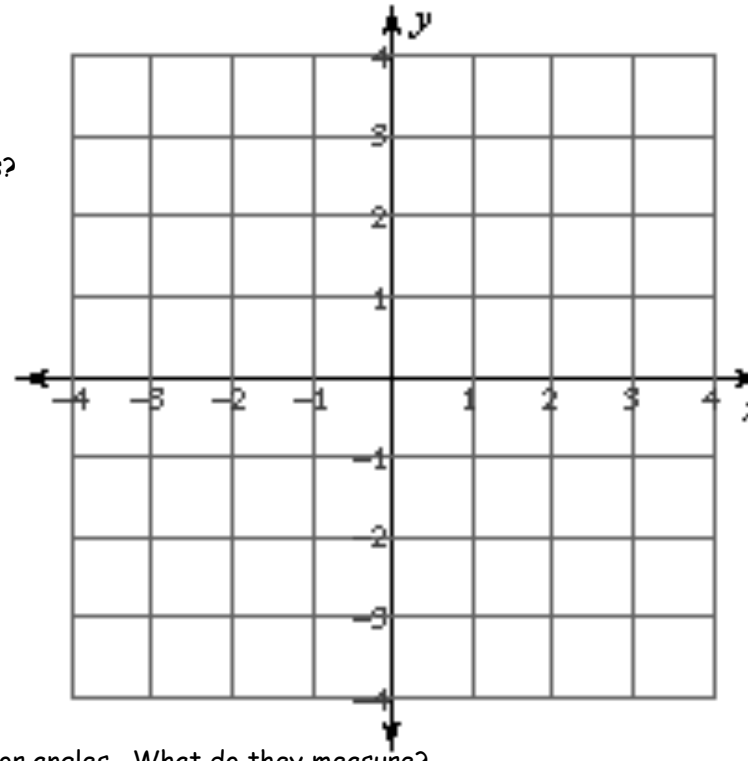
5) Prove your answer to #4.

6) Graph the equation y = 1 on the coordinate plane.

7) What line is a transversal in the graph?

8) Label all the angles formed by the transversal on the graph.

9) What pairs of angles are alternate interior angles?



10) Using a protractor, measure one pair of alternate interior angles. What do they measure?

11) Based on your evidence in #9 and #10 what do you think might be true about alternate interior angles when the transversal crosses parallel lines? Test it out on another pair of alternate interior angles. Does it work?

12) What pairs of angles are same-side interior angles?

13) Using a protractor, measure one pair of same-side interior angles. What do they measure?

14) Bases on your evidence in #12 and #13, what do you think might be true about same-side interior angles when the transversal crosses parallel lines? Test it out on another pair of same-side interior angles. Does it work?