

Geometry Practice Test - Unit 3
Parallel and Perpendicular Lines

☺ Name: _____ ☺
Date: _____ Pd: _____

- 1) *Fill in the blanks.*
Perpendicular lines have _____ slopes.
- 2) Name three ways to show lines are parallel.

Use the diagram at right for Questions 5 - 9.

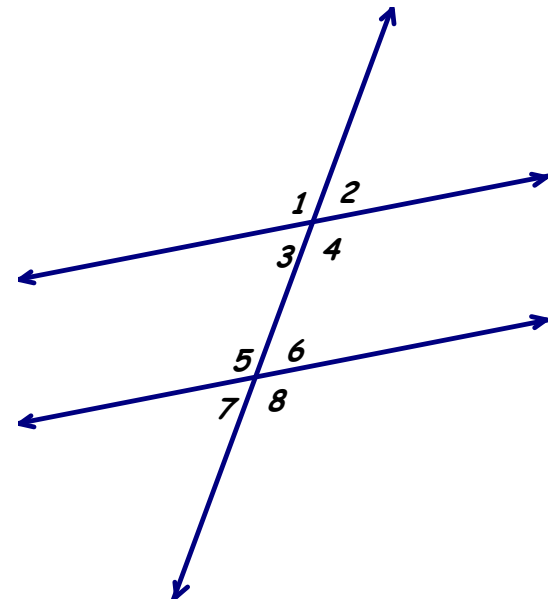
- 3) Two pairs of **corresponding** angles.

- 4) Two pairs of **alternate interior** angles.

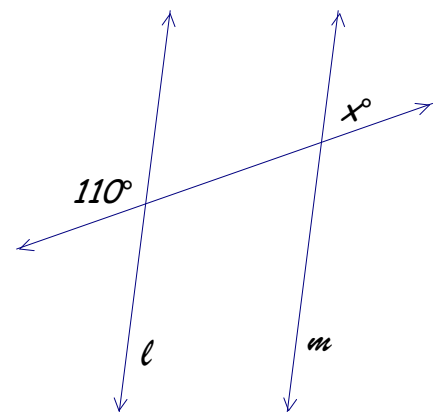
- 5) Identify the special angle pair name for $\angle 3$ and $\angle 5$.

- 6) Identify the special angle pair name for $\angle 1$ and $\angle 8$.

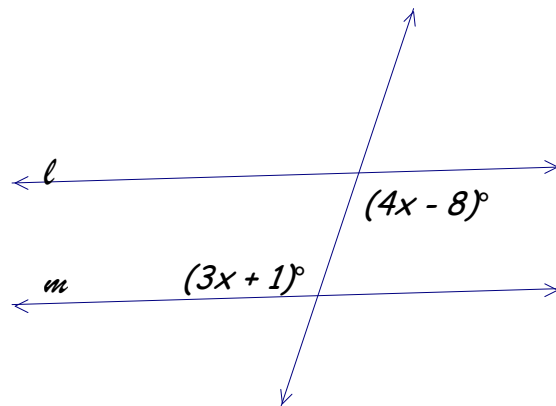
- 7) Identify the special angle pair name for $\angle 6$ and $\angle 7$.



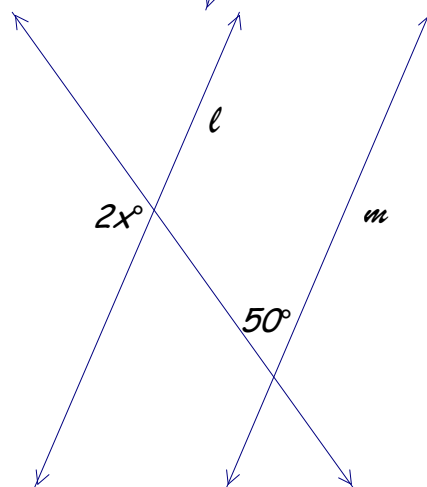
- 8) Find the value of x if $\ell \parallel m$.



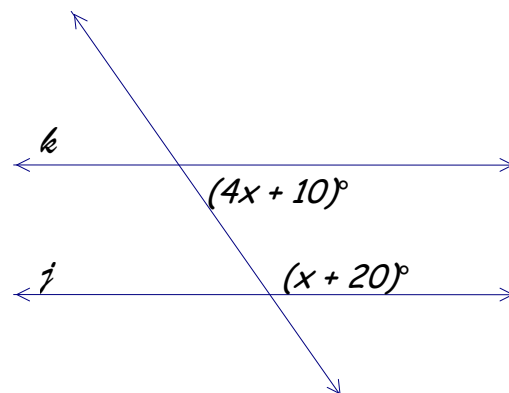
9) Find the value of x if $\ell \parallel m$.



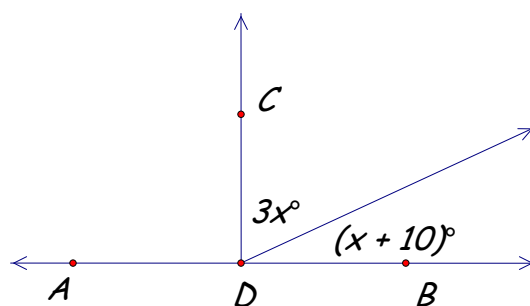
10) Find the value of x if $\ell \parallel m$.



11) What value of x guarantees that j and k will be parallel?



12) If $\overline{AB} \perp \overline{CD}$ find the value of x .



- 13) Find the slope of the line that passes through (5, 7) and (2, -9).
- 14) Find an equation of a line that passes through (2, 3) and has slope 5.
- 15) Find an equation of a line that passes through (1, -2) and is parallel to $y = 2x + 3$.
- 16) Find an equation of a line that passes through (5, 3) and is perpendicular to $y = \frac{3}{5}x + 4$.

- 17) Write the converse, inverse and contrapositive and determine whether each statement is true or false.

Conditional Statement: If an animal is a duck, then it is a bird. _____

Converse: _____, _____

Inverse: _____, _____

Contrapositive: _____, _____

- 18) Determine if the following lines are **parallel**, **perpendicular** or **neither**.

a)

$$2x + 5y = 10$$

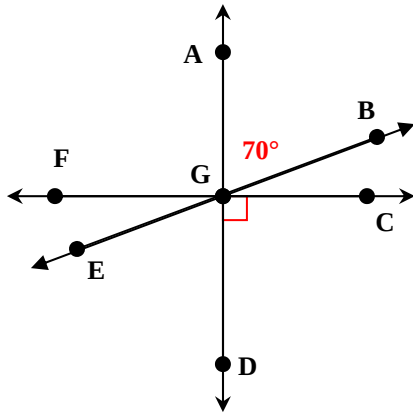
$$y + 11 = \frac{2}{5}x$$

b)

$$y = \frac{2}{3}x - 9$$

$$5y = 2x$$

19) Use the figure below to answer questions a)-e).



a) Name an angle **complementary** to $\angle AGB$.

b) Name an angle **supplementary** to $\angle AGB$.

c) What **type** of angle is $\angle AGD$?

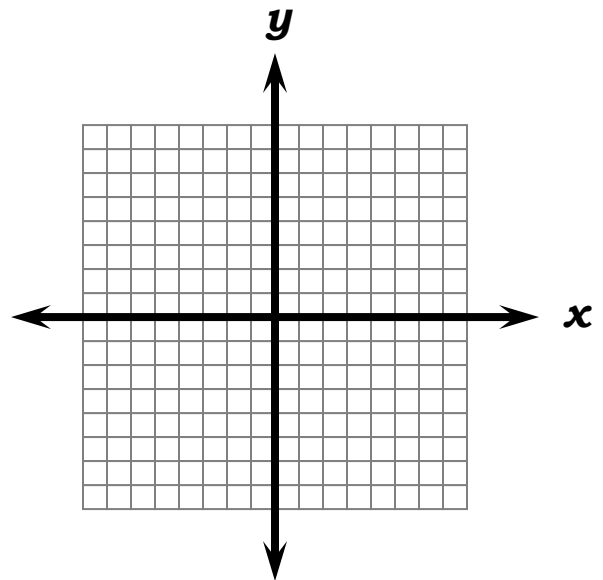
d) What angle is **vertical** to $\angle BGC$? What is its measure?

e) Name an angle that is congruent to $\angle AGB$.

f) The coordinates of point A is (6, 6) and point B is (3, 2). Plot the points below.

g) What is the **length** of segment AB (simplify the radical if necessary)?

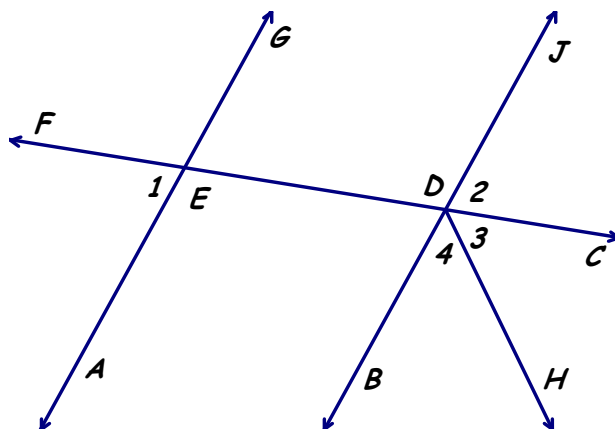
h) What is the **midpoint** of segment AB?



Use the figure at right for questions 20 and 21.

Given: $\overrightarrow{AG} \parallel \overrightarrow{BJ}$, $\overrightarrow{DH}$ bisects $\angle BDC$, $\overrightarrow{DC}$ bisects $\angle HDJ$

Prove: $\angle 1 \cong \angle 4$
20)



Statements	Reasons
1)	1) Given
2) $\angle 2 \cong \angle 3$	2)
3)	3) Def. of Angle Bisector
4)	4) Transitive Prop. of Cong.
5) $\overrightarrow{AG} \parallel \overrightarrow{BJ}$	5)
6) $\angle 1 \cong \angle 2$	6)
7)	7)
8)	8)

21) **Given:** $\overrightarrow{DH}$ bisects $\angle BDC$, $\overrightarrow{DC}$ bisects $\angle HDJ$, $\angle 1 \cong \angle 4$

Prove: $\overrightarrow{AG} \parallel \overrightarrow{BJ}$

(All rows may not be used.)

Statements	Reasons
1)	1)
2)	2)
3)	3)
4)	4)
5)	5)
6)	6)

22) to 25) Common Semester Exam Questions