Name:

Date:

School:

Facilitator:

4.02 Perpendicular Lines

Total Points: 69

**For problems 1-5, lines m and n are perpendicular to each other. Solve for x. Show your work.**

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| --- | --- | --- |
| This is a diagram of a line and a ray intersecting at a point. •  There is a lower case m next to the line and a lower case n next to the ray.  •  The angle to the left of the ray measures 15x. • There is a box between the two rays of the angle on the right of the ray. | This is a diagram of a line and a ray intersecting at a point. •  There is a lower case m next to the line and a lower case n next to the ray.  •  The measure of the angle to the left of the ray is unknown. •  The angle to the right of the ray is made up of two adjacent angles with measures 3x and 30 degrees. |  |
|  |  |  |
|  |  |  |

This is a diagram of two intersecting lines m and n.
•  The measure of the angle on the right of line n and at the top of line m is 2x minus 10 degrees. 
 This is a diagram of two adjancent angles.
•  There is a lower case m next to one of the rays and a lower case n next to another ray. 
• The measures of the angles are 6x and 4x.


1. 4.

This is a diagram of three lines intersecting at a point.
• The measures of two adjacent angles are given as 5x and 65 degrees. These angles are located below line m and to the right of line n.
•  Two of the lines, m and n, are perpendicular. 



5.

6. Describe the difference between parallel and perpendicular lines.

7. What is the definition of a perpendicular bisector?

8. Construct a perpendicular bisector with a compass and a straight edge. Use the instructions in example #9 of the lesson.

Use paper, a straightedge and a compass. Place a scan or picture of your hand-drawn construction as well.

9. Construct a perpendicular bisector using GeoGebra. Use the same directions in the Construct a Perpendicular Bisector activity that is on the task page. Take a screen shot (Print Screen) and paste here.

a. What are the lengths of segments AE and EB?

AE:

EB:

b. What is the length of segment AB?

c. What figure is the perpendicular bisector in your construction?

10. Which construction was easier to make? Explain why. When might you have to use these constructions?