

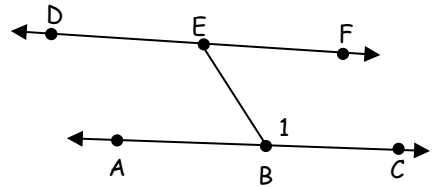
Midpoint Formula - $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ Distance Formula: $d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

Directions: This is your first test of the year. Show all of your work and answer the questions carefully. Do your answers make sense? If you finish early, go back and check your work. If you are still reading the directions, write "Geometry Rocks" at the top right hand corner of your test.

Multiple Choice: Write the letter of the best answer(s) on the line provided (some may have more than one answer)

_____ 1. Which of the following is the correct way to name $\square 1$? Select ALL that apply.

- | | |
|---------------------------------|---------------------------------|
| A) <input type="checkbox"/> B | B) <input type="checkbox"/> BAE |
| C) <input type="checkbox"/> CBE | D) <input type="checkbox"/> EBC |
| E) <input type="checkbox"/> CBA | F) <input type="checkbox"/> ECB |



_____ 2. In which of the following figures is $\square 1$ non - adjacent to $\square 2$? Select ALL that apply.

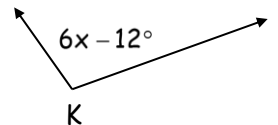
- | | |
|----|----|
| A. | B. |
| C. | D. |

_____ 3. Which of the following are undefined terms in Geometry? Select ALL that apply.

- | | | |
|----------|----------|------------|
| A. Point | B. Angle | C. Segment |
| D. Ray | E. Line | F. Plane |

_____ 4. What values of x would make $\square K$ an obtuse angle? Select ALL that apply.

- | | |
|--------------|-------------|
| A. $x = 17$ | B. $x = 22$ |
| C. $x = 150$ | D. $x = 31$ |

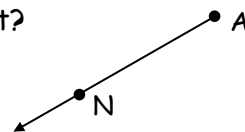


_____ 5. M is the midpoint of \overline{RS} and R has coordinates (2,9). M has coordinates (6,3). Find the coordinates of S.

- | | |
|------------|-------------|
| A. (0, 7) | B. (10, -3) |
| C. (-2, 3) | D. (4, 12) |

_____ 6. What is the proper notation for the picture to the right?

- | | |
|--------------------------|------------------------------|
| A. \overrightarrow{NA} | B. \overleftrightarrow{NA} |
| C. \overrightarrow{AN} | D. \overline{AN} |



Midpoint Formula - $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ Distance Formula: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

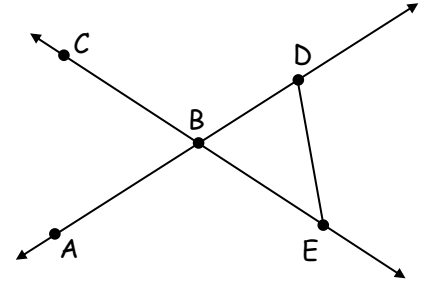
Write the letter of the best answer on the line provided (1 pt each)

_____ 7. Which of the following represents three collinear points?

- | | |
|------------|------------|
| A. B, C, E | B. D, C, E |
| C. A, C, E | D. A, B, D |

_____ 8. Which of the following is NOT another name for \overleftrightarrow{BE} ?

- | | |
|-------------------------------|------------------------------|
| A. \overleftrightarrow{EB} | B. \overleftrightarrow{CB} |
| C. \overleftrightarrow{BCE} | D. \overleftrightarrow{CE} |



_____ 9. What is the intersection of \overleftrightarrow{EB} and \overleftrightarrow{AD} ?

- | | |
|------------|------------|
| A. point A | B. point B |
| C. point C | D. point D |

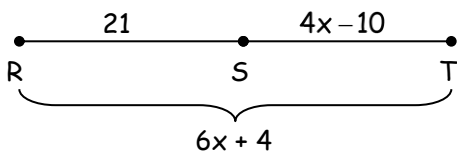
Please solve the following problems and place your final answer on the line provided. Show all work

10. Given the points $A(10,9)$ and $B(12,-5)$. Round answers to the nearest hundredth if necessary.

- | | |
|---|---|
| a. Find the midpoint of \overline{AB} . (2 pts) | b. Find the length of \overline{AB} . (2 pts) |
|---|---|

11. Solve for x.

(2 pts)



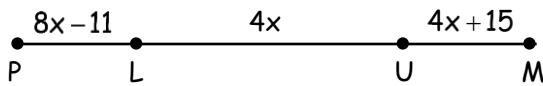
x = _____

Please solve the following problems and place your final answer on the line provided. Show all work

12. Draw \overline{HK} with R as the midpoint. If $HR = 5x + 6$ and $HK = 15x + 2$, solve for x. (3 pts)

x = _____

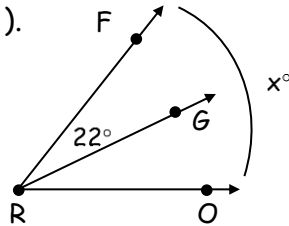
13. On \overline{PM} , $\overline{PL} \cong \overline{UM}$. What is the length of \overline{PM} ? (3 pts)



x = _____

PM = _____

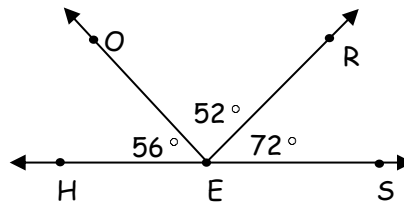
14. \overrightarrow{RG} is an angle bisector. Find x ($m\angle FRO$).



x = _____ (1 pt)

15. Given the diagram

- a) Find the measure of $m\angle OES$.

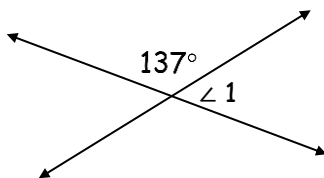


15a. $m\angle OES =$ _____ (1 pt)

- b) Is $\angle OES$ a right angle, straight angle, acute or obtuse?

15b. _____ (1 pt)

16. Find the measure of $\angle 1$

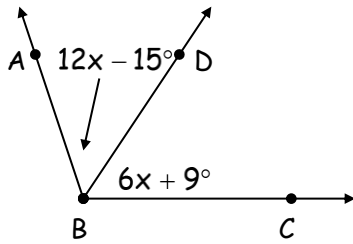


$m\angle 1 =$ _____ (1 pt)

Please solve the following problems and place your final answer on the line provided. Show all work.

17. If $m\angle ABC = 120^\circ$, solve for x .

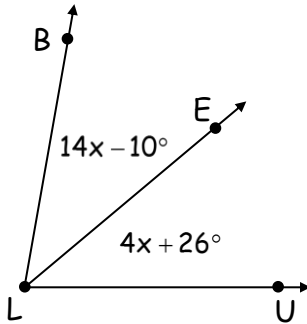
(2 pts)



$x =$ _____

18. \overrightarrow{LE} bisects $\angle BLU$. Solve for x .

(2 pts)



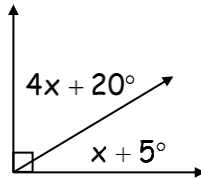
$x =$ _____

For problems 19-21, circle the vocabulary word that describe the relationship of the angles and then solve for the indicated variable.

19. The following angles are:

(3 pts)

Complementary
Supplementary
Vertical

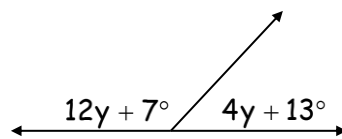


$x =$ _____

20. The following angles are:

(3 pts)

Complementary
Supplementary
Vertical

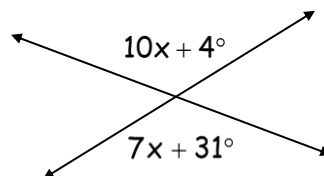


$y =$ _____

21. The following angles are:

(3 pts)

Complementary
Supplementary
Vertical



$x =$ _____

22. The ratio of two complementary angles is 1:5. Find the measure of each of the angles. (2 pts)

Angle 1 : _____

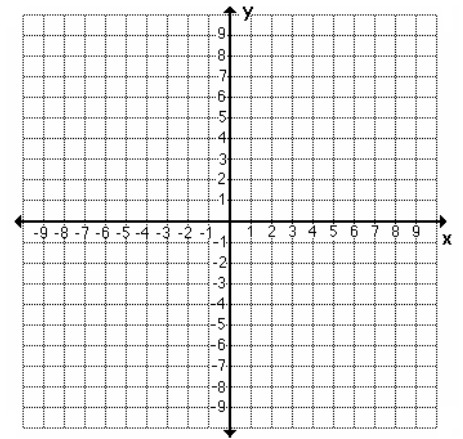
Angle 2: _____

23. Plot and label points $A(8,6)$ and $B(-4,-10)$. (3 pts)

On \overline{AB} there are two points that divide the segment into lengths which are in the ratio of 1:3. Locate and label the two points P and Q.

P _____

Q _____



Extra Credit: How many stripes are there on the American flag?