

# Algebra Practice with Segment Addition and Midpoint

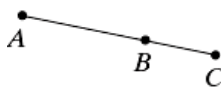
Geometry 1-5

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

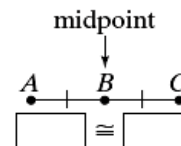
## Segment Addition Postulate:

If three points  $A$ ,  $B$ , and  $C$  are collinear and  $B$  is between  $A$  and  $C$ , then



## Definition of midpoint:

A midpoint is a point that divides a segment into



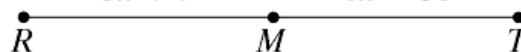
1. Use the Segment Addition Postulate to write an equation and solve for  $x$ .

If  $AB = 25$ , find the value of  $x$ . Then find  $AN$  and  $NB$ .



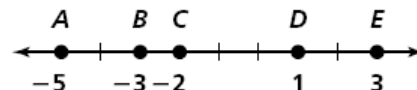
2. Use the definition of midpoint to write an equation and solve for  $x$ .

$M$  is the midpoint of  $\overline{RT}$ . Find  $RM$ ,  $MT$ , and  $RT$ .



#3-6: Find the length of each segment. Tell whether the segments are congruent.

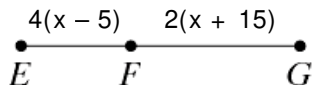
3.  $\overline{AC}$  and  $\overline{BD}$



5. Find the midpoint of  $\overline{AD}$ .

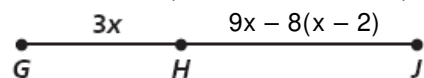
4.  $\overline{AD}$  and  $\overline{BE}$

7.  $EG = 100$ . Find the value of  $x$ . Then find  $EF$  and  $FG$ .



6. Find the midpoint of  $\overline{CD}$ .

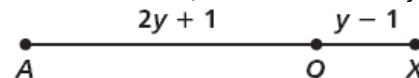
9. If  $GJ = 32$ , find the value of  $x$ ,  $GH$  and  $HJ$ .



8.  $Z$  is the midpoint of  $\overline{XY}$ , and  $XY = 27$ .

Draw and label a picture, including congruency marks. Then find  $XZ$ .

10. If  $AX = 45$ , find the value of  $y$ ,  $AQ$ ,  $QX$ .



11. Find  $PD$  if the coordinate of  $P$  is  $-7$  and the coordinate of  $D$  is  $-1$ .

12. Find  $SK$  if the coordinate of  $S$  is  $17$  and the coordinate of  $K$  is  $-5$ .

13. Find the coordinate of  $B$  if  $AB = 8$  and the coordinate of  $A$  is  $-2$ .

14. Find the coordinate of  $X$  if  $XY = 1$  and the coordinate of  $Y$  is  $0$ .