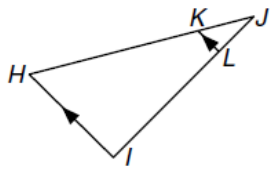
Geometry

Name _____

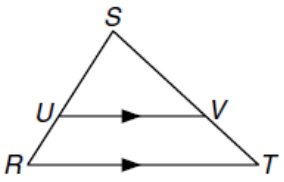
7.4 Parallel Lines and Proportional Parts

Date _____ Hour _____

1) If $JK = 7$, $KH = 21$, and $JL = 6$, find LI.



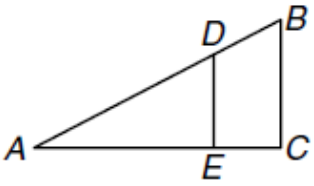
2) Find x and TV if $RU = 8$, $US = 14$, $TV = x - 1$ and $VS = 17.5$.



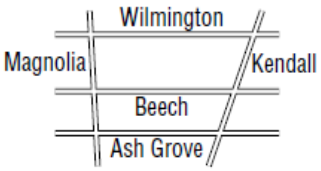
Determine whether $\overline{BC} \parallel \overline{DE}$.

3) $AD = 15$, $DB = 12$, $AE = 10$, and $EC = 8$

4) $AE = 30$, $AC = 45$, and AD is twice DB

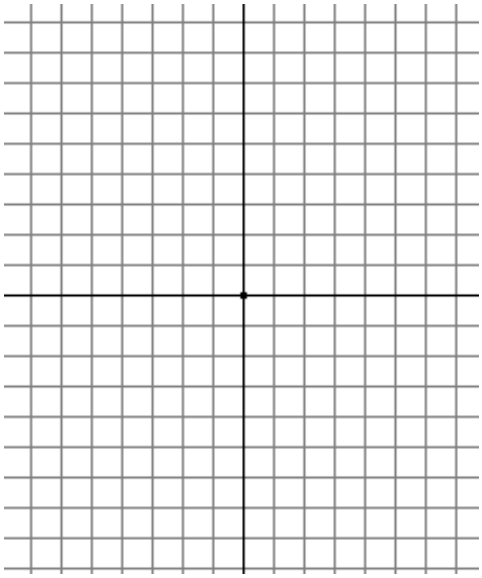


5) **MAPS** The distance from Wilmington to Ash Grove along Kendall is 820 feet and along Magnolia, 660 feet. If the distance between Beech and Ash Grove along Magnolia is 280 feet, what is the distance between the two streets along Kendall?



COORDINATE GEOMETRY For Exercises 6–8, use the following information.

Triangle ABC has vertices $A(-5, 2)$, $B(1, 8)$, and $C(4, 2)$. Point D is the midpoint of $\overline{AB}$ and E is the midpoint of $\overline{AC}$.



6) Find the coordinates of D.

7) Find the coordinates of E.

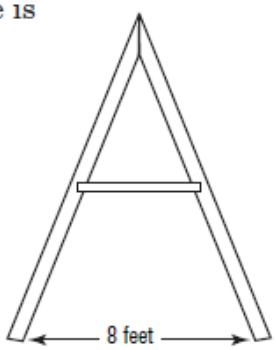
8) Find the slope of BC.

9) Find the slope of DE.

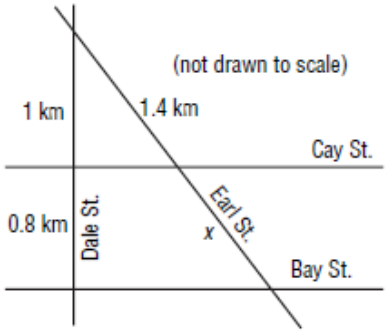
10) Find the length of BC.

11) Find the length of DE.

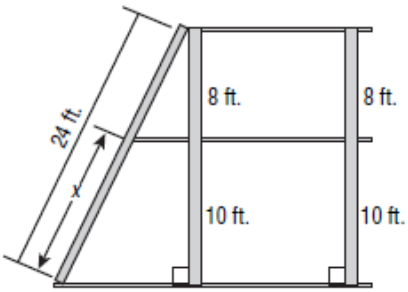
12) **CARPENTRY** Jake is fixing an A-frame. He wants to add a horizontal support beam halfway up and parallel to the ground. How long should this beam be?



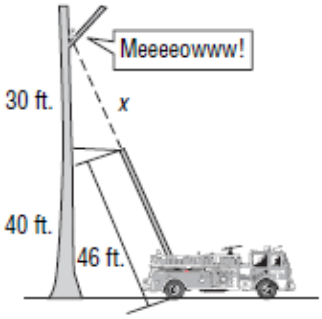
13) **STREETS** In the diagram, Cay Street and Bay Street are parallel. Find x.



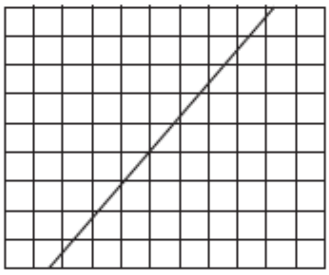
14) **JUNGLE GYMS** Prassad is building a two-story jungle gym according to the plans shown. Find x.



15) **FIREMEN** A cat is stuck in a tree and firemen try to rescue it. Based on the figure, if a fireman climbs to the top of the ladder, how far away is the cat?



Nick has a stick that he would like to divide into 9 equal parts. He places it on a piece of grid paper as shown. The grid paper is ruled so that vertical and horizontal lines are equally spaced.



16) Explain how he can use the grid paper to help him find where he needs to cut the stick.

17) Suppose Nick wants to divide his stick into 5 equal parts utilizing the grid paper. What can he do?