Homework

Key

Find the coordinates of T that partitions:

9. A(2, 3) to B(5, 9) in a 1:2 ratio.

$\frac{1}{3}(5-2)+2$, $\frac{1}{3}(9-3)+3$

$(3, 5)$

10. A(1, 4) to B(7, 13) in a 1:2 ratio.

$\frac{1}{3}(7-1)+1$, $\frac{1}{3}(13-4)+4$

$(3, 7)$

11. A(-2, 1) to B(8, 11) in a 2:3 ratio.

$\frac{2}{5}(8+2)-2$, $\frac{2}{5}(11-1)+1$

$(2, 5)$

12. A(2, 4) to B(8, 10) in a 5:1 ratio.

$\frac{5}{6}(8-2)+2$, $\frac{5}{6}(10-4)+4$

$(7, 9)$

13. A(-5, 4) to B(7, -4) in a 1:3 ratio.

$\frac{1}{4}(7+5)-5$; $\frac{1}{4}(-4-4)+4$

$(-2, 2)$

14. A(-9, -9) to B(5, -2) in a 3:4 ratio.

$\frac{3}{7}(5+9)-9$, $\frac{3}{7}(-2+9)-9$

$(-3, -6)$

15. A(-8, -2) to B(6, 19) in a 2:5 ratio.

$\frac{2}{7}(6+8)-8$, $\frac{2}{7}(19+2)-2$

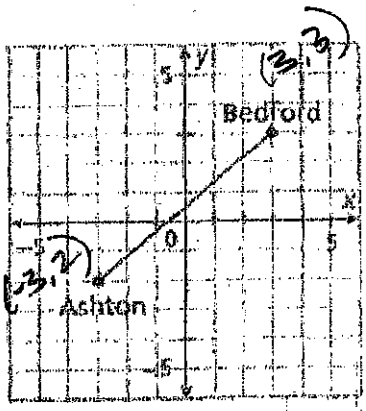
$(-4, 4)$

16. A(0, 0) to B(4, 3) in a 3:2 ratio.

$\frac{3}{5}(4-0)+0$, $\frac{3}{5}(3-0)+0$

$(2.4, 1.8)$

17. The map shows a straight highway between two towns. Highway planners want to build a rest stop somewhere between the two towns. He wants the rest stop to be 1/6 of the way from Ashton. At what coordinate would the rest stop be located?



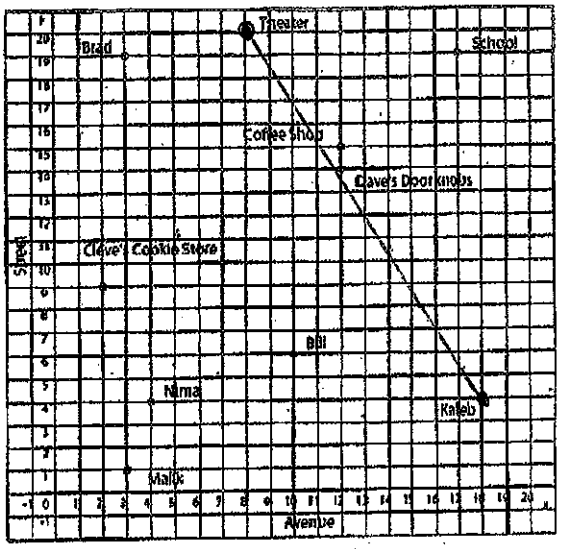
$\frac{1}{6}(3+3)-3$, $\frac{1}{6}(3-2)+2$

$(-2, 2.2)$

All Problems

Answer Key

Use the map and the information given to solve each problem that follows.



(8,20) (18,4)

5. Luis works at a theater on 8th Avenue and 20th Street. Kaleb lives at the corner of 18th Avenue and 4th Street. What is a possible location that is midway between them?

Midpoint $\left(\frac{8+18}{2}, \frac{20+4}{2}\right) = \boxed{(13,12)}$ Daves Doorknobs is closest

6. Nima lives at the corner of 4th Avenue and 4th Street. Bill lives at the corner of 10th Avenue and 6th Street. Their favorite bakery is located midway between them. What is one possible coordinate of the bakery? (4,4) (10,6)

$\left(\frac{4+10}{2}, \frac{4+6}{2}\right) = \boxed{(7,5)}$

7. Cleve's Cookie Store is located at the corner of 2nd Avenue and 9th Street. Dave's Doorknobs is located at the corner of 12th Avenue and 14th Street. Located 1/5 of the distance from Cleve's Cookie Store is the post office. Where is the post office?

start at cleve's

(2,9) (12,14) $\frac{1}{5}(12-2)+2$ $\frac{1}{5}(14-9)+9$ $= \boxed{(4,10)}$

8. Malik and Brad both live on 3rd Avenue. Malik lives at the corner of 1st Street, and Brad lives at the corner of 19th Street. 2/3 the distance from Malik's apartment to Brad's apartment is a market. Where is the market? (3,1) (3,19) start w/ Malik

$\frac{2}{3}(3-3)+3$, $\frac{2}{3}(19-1)+1 \Rightarrow \boxed{(3,13)}$

9. The main entrance to the high school is located at the corner of 17th Avenue and 19th Street. On his way from school to the bank, Luis stops at the coffee shop located at 12th Avenue and 15th Street. The coffee shop is the midpoint of this trip. What is the location of the bank? (17,19) (12,15) * Work backward from midpt formula

$\frac{17+x}{2} = 12$ $\quad \frac{19+y}{2} = 15$

$17+x=24$ $\quad 19+y=30$

$x=7$ $\quad y=11$

*Bank is at (7,11)