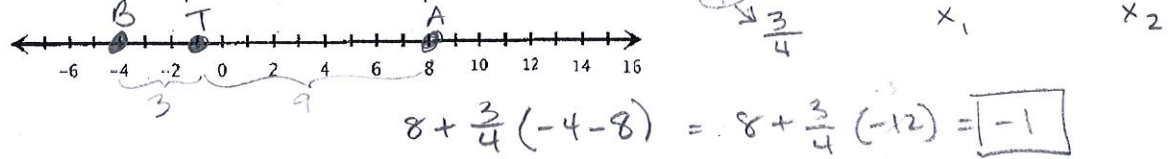


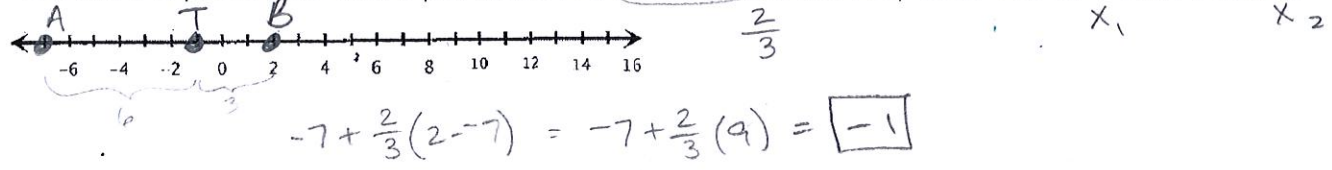
1. Find the missing point for each problem:

- A. Endpoint: (4, 10) } -11
 Midpoint: (2, -1) } -11
 Endpoint: (0, -12)
- B. Endpoint: (7, -19) $\left(\frac{7+21}{2}, \frac{-19-3}{2}\right)$
 Endpoint: (21, -3)
 Midpoint: (14, -11)
- C. Midpoint: (38, -9) $\left(\frac{57+19}{2}, \frac{-20+2}{2}\right)$
 Endpoint: (57, -20)
 Endpoint: (19, 2)

2. Find the point T, so that it partitions A to B in a 3:1 ratio. A is at 8 and B is at -4.



3. Find the point T, so that it partitions A is two-thirds of the way to B. A is at -7 and B is at 2.



4. Find the coordinates of T that partitions A(4, -12) to B(8, 10) in a 1:3 ratio.

$4 + \frac{1}{4}(8-4) = 4 + \frac{1}{4}(4) = 5$
 $-12 + \frac{1}{4}(10-(-12)) = -12 + \frac{1}{4}(22) = -6.5$
(5, -6.5)

5. Find the coordinates of T that partitions A(0, 6) to B(-10, -8) in a 3:1 ratio.

$0 + \frac{3}{4}(-10-0) = \frac{3}{4}(-10) = -7.5$
 $6 + \frac{3}{4}(-8-6) = 6 + \frac{3}{4}(-14) = -4.5$
(-7.5, -4.5)

6. Using points A (22, 6) and B (7, -1), find point T that is two-fifths from point B.

$7 + \frac{2}{5}(22-7) = 7 + \frac{2}{5}(15) = 13$
 $-1 + \frac{2}{5}(6-(-1)) = -1 + \frac{2}{5}(7) = 1.8$
(13, 1.8)

↳ Define B as (x₁, y₁)

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

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

$(8, 20)$ $(18, 4)$
 $\left(\frac{8+18}{2}, \frac{20+4}{2}\right) = (13, 12)$

8. 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 one-third the way from Nima's to Bill's house. Where is the bakery?

$(4, 4)$ $(10, 6)$
 x_1, y_1 x_2, y_2
 $4 + \frac{1}{3}(10-4) = 6$
 $4 + \frac{1}{3}(6-4) = 4.7$ $(6, 4.7)$

9. 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 $\frac{1}{5}$ of the distance from Cleve's Cookie Store is the post office. Where is the post office?

$(2, 9)$ $(12, 14)$
 x_1, y_1 x_2, y_2
 $2 + \frac{1}{5}(12-2) = 4$
 $9 + \frac{1}{5}(14-9) = 10$ $(4, 10)$

10. Malik and Brad both live on 3rd Avenue. Brad lives at the corner of 19th Street, and Malik lives at the corner of 1st Street. $\frac{2}{3}$ of the distance from Brad's apartment to Malik's apartment is a park. Where is the park?

$(3, 19)$ $(3, 1)$
 x_1, y_1 x_2, y_2
 $3 + \frac{2}{3}(3-3) = 3$
 $19 + \frac{2}{3}(1-19) = 7$ $(3, 7)$

11. If 1 block = 1 kilometer, how far does Kaleb have to walk to get from his house to school? (Round your answer to 1 decimal place).

$(18, 4)$ $(17, 19)$
 $\sqrt{(17-18)^2 + (19-4)^2} = \sqrt{1 + 225} = \sqrt{226} = 15 \text{ Km}$

12. If the coffee shop is the halfway between the theatre and the mall, where is the mall located?

midpoint $(12, 15)$ endpoint $(8, 20)$

E $(8, 20)$
 $+4 \swarrow \searrow -5$
M $(12, 15)$
 $+4 \swarrow \searrow -5$
E $(16, 10)$

