

Triangle FGT has vertices F(3, 12); G(5, -4) and T(-1, -2)

a) Determine the equation of the altitude from T to FG

Step 1] find slope of "FG"
F(3, 12) G(5, -4)

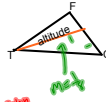
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{-4 - 12}{5 - 3}$$

$$= \frac{-16}{2}$$

$$m = -8$$

Step 2] take opposite sign
Slope perpendicular
 $m_{\perp} = \frac{1}{8}$



Step 3] use $m_{\perp} = \frac{1}{8}$ and T(-1, -2)

$$y - y_1 = m(x - x_1)$$

$$y - 2 = \frac{1}{8}(x - (-1))$$

$$y - 2 = \frac{1}{8}x + \frac{1}{8}$$

Multiply all terms by 8

$$y - 2 = \frac{1}{8}x + \frac{1}{8}(8)$$

$$8y - 16 = 1x + 1$$

$$0 = 1x - 8y + 17$$

$$0 = 1x - 8y$$

b) Determine the equation of the median from G to FT
Triangle FGT has vertices F(3, 12); G(5, -4) and T(-1, -2)

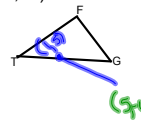
Step 1] find Midpoint of FT
F(3, 12); T(-1, -2)

$$M_{FT} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$= \left(\frac{-1 + 3}{2}, \frac{-2 + 12}{2} \right)$$

$$= \left(\frac{2}{2}, \frac{10}{2} \right)$$

$$= (1, 5)$$



Step 2] Use Midpoint(1, 5) and G(5, -4)
to find slope

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{-4 - 5}{5 - 1}$$

$$m = \frac{-9}{4}$$

Step 3] Pick G(5, -4) and $m = \frac{-9}{4}$
to find equation

$$y - y_1 = m(x - x_1)$$

$$y - -4 = \frac{-9}{4}(x - 5)$$

$$y + 4 = \frac{-9}{4}(x - 5)$$

$$y + 4 = \frac{-9}{4}x + \frac{45}{4}$$

$Ax + By + C = 0$

$$y + 4 = \frac{-9}{4}x + \frac{45}{4}$$

Wakeup Worksheet

front

1, 2, 3, 4,



Review Sheet #1

Question

1 a d

2 b

3

(part iii)

4 c

5 a

7

a b c
8