

per. 246 9/20hw \rightarrow per. 5#9 9/21

307/ Write an eqn. of the \perp bisector:

19) M(1,5) N(7,-1)

$$m = \frac{5 - (-1)}{1 - 7} = \frac{6}{-6} = -1$$

$$\perp m = 1$$

$$M = \left(\frac{1+7}{2}, \frac{5+(-1)}{2} \right)$$

$$M = \left(\frac{8}{2}, \frac{4}{2} \right)$$

$$M = (4, 2)$$

$$y - 2 = 1(x - 4) \text{ Ans.}$$

22) Y(10,-7) Z(-4,1)

$$m = \frac{-7 - 1}{10 - (-4)} = \frac{-8}{14} = -\frac{4}{7}$$

$$\perp m = \frac{7}{4}$$

$$M = \left(\frac{10+(-4)}{2}, \frac{-7+1}{2} \right) = \left(\frac{6}{2}, \frac{-6}{2} \right) = (3, -3)$$

$$y - (-3) = \frac{7}{4}(x - 3)$$

$$y + 3 = \frac{7}{4}(x - 3) \text{ Ans.}$$

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20) $Q(-2, 0)$ $R(6, 12)$

1) $m = \frac{12-0}{6-(-2)} = \frac{12}{8} = \frac{3}{2}$

2) $\boxed{m = -\frac{2}{3}}$

3) $M = \left(\frac{-2+6}{2}, \frac{0+12}{2} \right) = \left(\frac{4}{2}, \frac{12}{2} \right) = \boxed{(2, 6)}$

4) $\boxed{y-6 = -\frac{2}{3}(x-2)}$

21) $U(-3, 4)$ $V(9, 8)$

1) $m = \frac{8-4}{9-(-3)} = \frac{4}{12} = \frac{1}{3}$

2) $\boxed{m = -3}$

3) $M = \left(\frac{-3+9}{2}, \frac{4+8}{2} \right) = \left(\frac{6}{2}, \frac{12}{2} \right) = \boxed{(3, 6)}$

4) $\boxed{y-6 = -3(x-3)}$