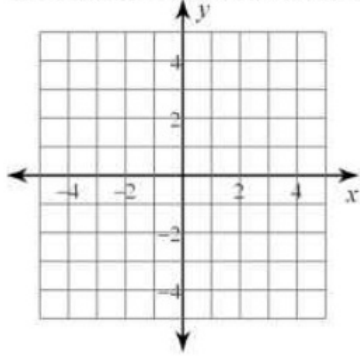


Show all work. Each question is worth 4 points (2 for answer, 2 for work). Round decimals to **thousandths**.

For numbers 1-4, consider points A(-1.5, -2.2) and B(4.5, 3.8). The graph is provided for scratch work if needed.



1. What is the distance between A and B?  $\sqrt{72} \approx 8.485$

Concept:

Distance

Book:

Formula: §1.6

2. What is the midpoint of  $\overline{AB}$ ? (1.5, 0.8)

Concept:

Midpoint formula §1.6

3. What is the slope of  $\overline{AB}$ ? 1

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

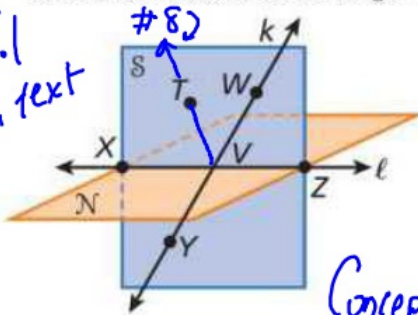
4. Write point-slope equation of the perpendicular bisector of  $\overline{AB}$ .

$y - 0.8 = -1(x - 1.5)$

Point slope form: §5.1 sec pg. 303

For numbers 5-8, refer to the diagram below:

§1.1 in text



5. Name a line that passes through points W and Y.  $\overleftrightarrow{WY}$

6. Name a plane that contains points X, V, and T.  $\mathcal{S}$  or plane XVT.

7. Name the intersection of planes N and S. (line)  $\overleftrightarrow{XV}$

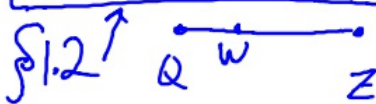
8. a.) In the figure, connect points T and V with a ray. (draw)

b.) Complete the statement:  $\angle XVW = \angle XVT + \angle WVT$

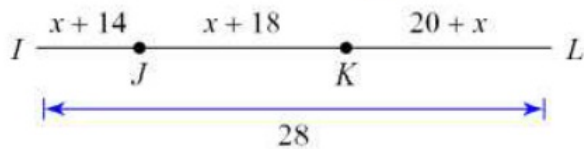
Concept: deciphering a geometric figure.

(Book: §1.3)

9. Point W is between points Q and Z.  $QW = x + 14$ ,  $QZ = 13$ , and  $WZ = 2x + 20$ . How long is QW? 7



10. Find the length of  $\overline{IJ}$ . 6



Segment addition

words  $\rightarrow$  picture  $\rightarrow$  math equation

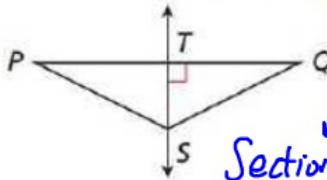
11. Are these two lines parallel, perpendicular, or neither? Explain.

$$\begin{cases} y = \frac{2}{3}x + 5 \\ 3x + 2y = 13 \end{cases}$$

Perpendicular  
 $m_1 = 2/3$   $m_2 = -3/2$

Slopes: see Section: §3.6  
 parallel → same slope  
 perpendicular → opposite reciprocal slope

For numbers 12-13, ST is the perpendicular bisector of PQ.



12. If SP = 3cm and PT = 4cm, how long is QT? 4cm

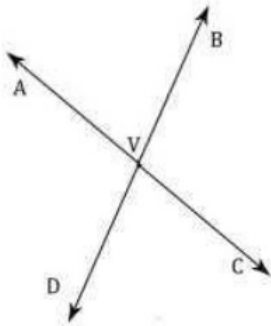
13. If SP = x+12 and SQ = 2x-14, how long is SP? 38

Section: §5.1 see pg. 300

14. Z is in the interior of  $\angle WXY$ .  $\angle WXZ = 40^\circ$ , and  $\angle WXY = 110^\circ$ . Find  $\angle ZXY$ .  $70^\circ$

↳ section 1.3: pg. 22

For numbers 15-19, refer to the diagram below.



15.  $\angle AVD$  and  $\angle BVA$  form a linear pair.

16. If  $\angle AVD$  is 101deg, then  $\angle BVC =$   $101^\circ$

17. If  $\angle AVD$  is 101deg, then  $\angle BVA =$   $79^\circ$

18. Assume your answer to 17 is correct. Why is  $\angle CVD$  the same?

$79^\circ$ ; vertical angles are  $\cong$ .

19. Are there any complementary angles in this picture? Explain.

No; no 2 angles' sum = 90

20. A certain angle measures 22 degrees. What is its complement?  $68^\circ$

$-90 \rightarrow 68$

21. The complement of an angle is 20 degrees less than half the supplement of the same angle. What is the angle?

$$90 - x = \frac{1}{2}(180 - x) - 20$$

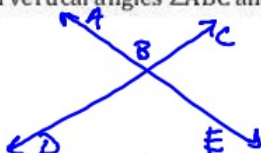
(not on test)  $40^\circ$

22. Sketch adjacent angles  $\angle WXY$  and  $\angle XYZ$  below.



§1.4 Angle Pairs.

23. Sketch vertical angles  $\angle ABC$  and  $\angle DBE$  below.



24. What kind of angle (acute, right, obtuse) is the supplement of an acute angle? Explain.

Obtuse; an acute angle is less than 90. It would take more than 90 to = 180.

