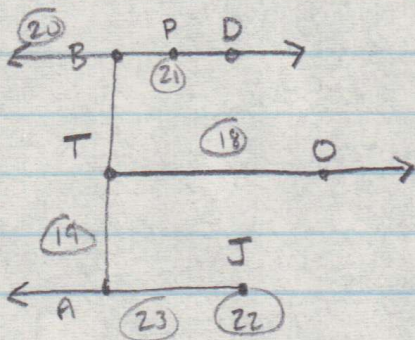


Geometry Ch 1 Test Review

Answer Key

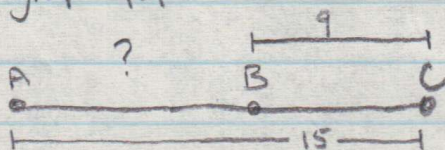
1. straight, infinitely long in both directions, has 2 arrows
2. point, straight, forever (or without stopping)
3. point, point
4. lie on the same line
5. lie on the same plane
6. cross each other
7. adding all sides together
8. in half.
9. into two equal measures.
10. 0, 90
11. 90
12. 90, 180
13. 180
14. add to measure 90°
15. add to measure 180°
16. share a vertex a vertex & a side.
17. share a side and are supplementary.



24. on Graph Paper

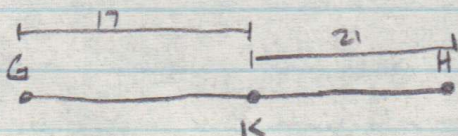
25. on graph paper

26.



$$15 - 9 = 6$$

27.



$$GH = 17 + 21 = 38$$

1.3 Problems

Pg 24-25 #'s 9, 10, 17, 18, 25-27

9. Segment bisector: \overrightarrow{MN}

Finding x ...

$$\begin{array}{r} 3x + 1 = 8x - 24 \\ -3x \quad -1 \quad -7x \quad -1 \end{array}$$

$$\frac{-5x}{-5} = \frac{-25}{-5}$$

$$x = 5$$

$$XY = 3x + 1 + 8x - 24$$

$$3(5) + 1 + 8(5) - 24$$

$$15 + 1 + 40 - 24$$

32

plug in

10. Segment bisector: line n

Finding x ...

$$\begin{array}{r} 5x + 8 = 9x + 12 \\ -9x \quad -8 \quad -4x \quad -8 \end{array}$$

$$\frac{-4x}{-4} = \frac{4}{-4}$$

$$x = -1$$

$$XY = 5x + 8 + 9x + 12$$

$$= 5(-1) + 8 + 9(-1) + 12$$

$$= -5 + 8 - 9 + 12$$

6

plug in

17. midpoint: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

$$C(-2, 0) \quad D(4, 9) \quad \left(\frac{-2+4}{2}, \frac{0+9}{2} \right) \quad \left(\frac{2}{2}, \frac{9}{2} \right) \quad (1, 9/2)$$

18. $C(-8, -6) \quad D(-4, 10)$

$$\left(\frac{-8 + -4}{2}, \frac{-6 + 10}{2} \right) \quad \left(\frac{-12}{2}, \frac{4}{2} \right) \quad (-6, 2)$$

25. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ $E(3, 7) \quad F(6, 5)$

$x_1, y_1 \quad x_2, y_2$

$$d = \sqrt{(6-3)^2 + (5-7)^2} = \sqrt{3^2 + (-2)^2}$$

$$= \sqrt{9+4}$$

$$= \sqrt{13}$$

$$\begin{aligned}
 26. \quad G(-5, 4) \quad H(2, 6) & \quad d = \sqrt{(2 - (-5))^2 + (6 - 4)^2} \\
 x_1, y_1 \quad x_2, y_2 & \quad = \sqrt{7^2 + 2^2} \\
 & \quad = \sqrt{49 + 4} \\
 & \quad = \sqrt{53}
 \end{aligned}$$

$$\begin{aligned}
 27. \quad J(-8, 0) \quad K(1, 4) & \quad d = \sqrt{(1 - (-8))^2 + (4 - 0)^2} \\
 x_1, y_1 \quad x_2, y_2 & \quad = \sqrt{9^2 + 4^2} \\
 & \quad = \sqrt{81 + 16} \\
 & \quad = \sqrt{97}
 \end{aligned}$$

1.4 Problems Pg 32-34 #'s 9-11, 15, 16, 19-21

9. on Graph Paper

$$\begin{aligned}
 \text{Answer: } P &= 5 + 8 + \sqrt{89} \\
 &= 13 + \sqrt{89} \\
 &\approx 22.43
 \end{aligned}$$

10. on Graph paper

$$\begin{aligned}
 \text{Answer: } P &= 5 + 5 + \sqrt{20} \\
 P &= 10 + \sqrt{20} \\
 &\approx 14.47
 \end{aligned}$$

11. Finding lots of Distances...

$$PL: d = \sqrt{(1 - (-1))^2 + (4 - (-2))^2} = \sqrt{2^2 + 6^2} = \sqrt{4 + 36} = \sqrt{40}$$

$$PN: d = \sqrt{(2 - (-1))^2 + (6 - 2)^2} = \sqrt{3^2 + 2^2} = \sqrt{9 + 4} = \sqrt{13}$$

$$NM: d = 2 \quad (\text{count})$$

$$ML: d = \sqrt{(1 - 4)^2 + (4 - 0)^2} = \sqrt{(-3)^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$$

Add up...

$$P = \sqrt{40} + \sqrt{13} + 2 + 5 \approx 16.93$$

15. on Graph Paper

$$A = 3 \cdot 3 = 9 \text{ square units}$$

16. on Graph Paper

$$A = 5 \cdot 2 = 10 \text{ square units}$$

$$19. P = AB + BF + FA = \sqrt{26} + \sqrt{8} + \sqrt{18} \approx 12.17$$

$$\begin{aligned} AB &= \sqrt{(0 - (-5))^2 + (3 - 4)^2} \\ &= \sqrt{5^2 + (-1)^2} \\ &= \sqrt{25 + 1} \\ &= \sqrt{26} \end{aligned}$$

$$\begin{aligned} BF &= \sqrt{(-2 - 0)^2 + (1 - 7)^2} \\ &= \sqrt{(-2)^2 + (-6)^2} \\ &= \sqrt{4 + 36} \\ &= \sqrt{40} \end{aligned}$$

$$FA = \sqrt{(-2 - (-5))^2 + (1 - 4)^2} = \sqrt{3^2 + (-3)^2} = \sqrt{9 + 9} = \sqrt{18}$$

$$20. P = AD + CD + BC + AB = \sqrt{162} + 4 + \sqrt{32} + \sqrt{26} \approx 27.48$$

$$AD = \sqrt{(4 - (-5))^2 + (-5 - 4)^2} = \sqrt{9^2 + (-9)^2} = \sqrt{81 + 81} = \sqrt{162}$$

$$CD = 4$$

$$BC = \sqrt{(4 - 0)^2 + (-1 - 3)^2} = \sqrt{4^2 + (-4)^2} = \sqrt{16 + 16} = \sqrt{32}$$

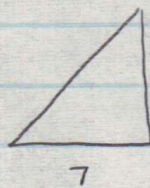
$$AB = \sqrt{26} \quad (\text{found it in \#19})$$

$$21. A = \frac{1}{2}bh = \frac{1}{2}(ED)(EC) = \frac{1}{2}\sqrt{8} \cdot \sqrt{8} = 4 \text{ sq. units}$$

$$ED = \sqrt{(4 - 2)^2 + (-5 - (-3))^2} = \sqrt{2^2 + (-2)^2} = \sqrt{8}$$

$$EC = \sqrt{(2 - 4)^2 + (-3 - (-1))^2} = \sqrt{(-2)^2 + (-2)^2} = \sqrt{8}$$

#24 on Review



$$2x - 15$$

$$A = 40 \quad x = ?$$

$$A = \frac{1}{2}bh \Rightarrow 40 = \frac{1}{2}(7)(2x - 15)$$

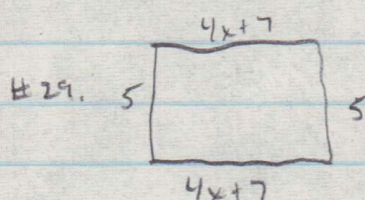
$$40 = 3.5(2x - 15)$$

$$40 = 7x - 52.5$$

$$+52.5 \quad +52.5$$

$$\frac{92.5}{7} = \frac{7x}{7}$$

$$x \approx 13.21$$



#29.

$$P = 51$$

$$51 = 8x + 24$$

$$-24 \quad -24$$

$$\frac{27}{8} = \frac{8x}{8}$$

$$x = \frac{27}{8} \text{ or } 3.375$$

$$51 = 4x + 7 + 4x + 7 + 5 + 5$$

All sides added together

1.5 problems

Pg 42-43 21, 28-32, 37-39

21. $37 + 21 = 58^\circ$

28. $14x + 70 + 20x + 8 = 180$

$$34x + 78 = 180$$

$$\begin{array}{r} -78 \\ -78 \end{array}$$

$$\frac{34x}{34} = \frac{102}{34}$$

$x = 3$. plug in to find Angles.

$$m\angle ABX = 14x + 70 = 14(3) + 70 = 112^\circ$$

$$m\angle XBC = 20x + 8 = 20(3) + 8 = 68^\circ$$

29. $15x - 43 + 8x + 18 = 90$

$$23x - 25 = 90$$

$$\begin{array}{r} +25 \\ +25 \end{array}$$

$$\frac{23x}{23} = \frac{115}{23}$$

$$x = 5$$

plug in to find angles

$$m\angle RSQ = 15(5) - 43 = 32^\circ$$

$$m\angle QST = 90 - 32 = 58^\circ$$

↳ b/c they are complimentary

30. $10x + 21 + 17x = 90$

$$23x + 21 = 90$$

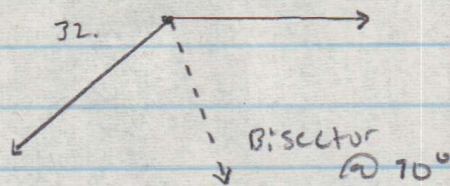
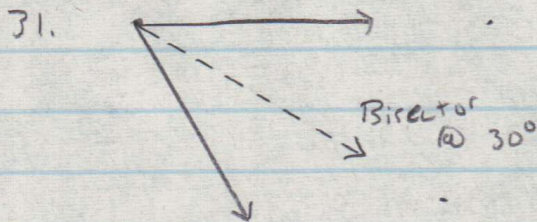
$$\begin{array}{r} -21 \\ -21 \end{array}$$

$$\frac{23x}{23} = \frac{69}{23}$$

$$x = 3$$

$$10(3) + 21 = 51^\circ = m\angle HEF$$

$$m\angle DEH = 90 - 51 = 39^\circ$$



37. $6x + 14 = 3x + 29$ $x = 5$

$$\begin{array}{r} -3x \\ -3x \end{array}$$

$$3x + 14 = 29$$

$$\begin{array}{r} -14 \\ -14 \end{array}$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$m\angle ABD = 6(5) + 14 = 44^\circ$$

$$m\angle DBC = 44^\circ$$

since they are the same.

$$38. \quad \begin{array}{r} 3x+6 = 7x-18 \\ -3x+18 \quad -3x+18 \end{array}$$

$$\frac{24}{4} = \frac{4x}{4}$$

$$x = 6$$

$$m\angle ABD = m\angle DBC$$

$$m\angle ABD = 3x+6 = 3(6)+6 = 24^\circ$$

$$m\angle DBC = 24^\circ$$

$$m\angle ABC = 24+24 = 48^\circ$$

$$39. \quad \begin{array}{r} -4x+33 = 2x+8 \\ 4x-81 \quad +4x-81 \end{array}$$

$$\frac{-48}{6} = \frac{6x}{6}$$

$$x = -8$$

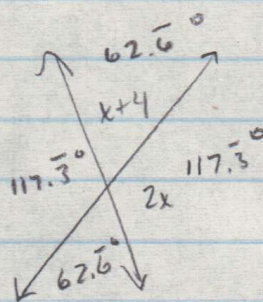
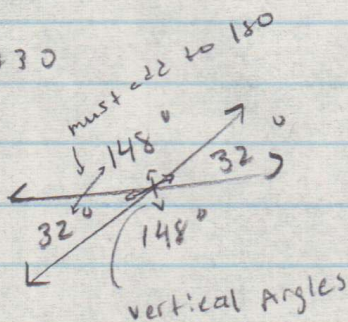
$$m\angle ABD = -4(-8)+33 = 65^\circ$$

$$m\angle DBC = 65^\circ$$

$$m\angle ABC = 130^\circ$$

1.6 Problems

#30



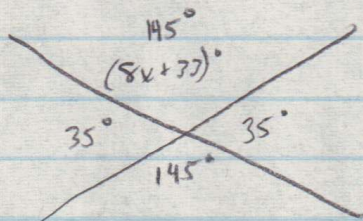
$$x+4 + 2x = 180$$

$$3x+4 = 180$$

$$\frac{3x}{3} = \frac{176}{3}$$

$$x = 58.\bar{6}$$

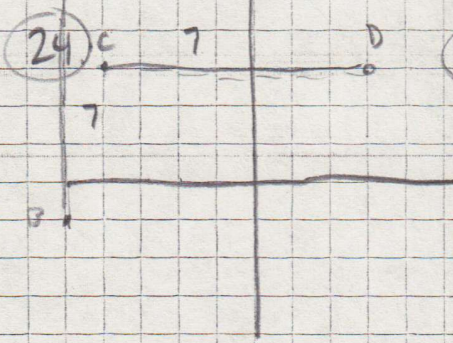
$$x = 58.\bar{6}$$



$$8x+33 = 145$$

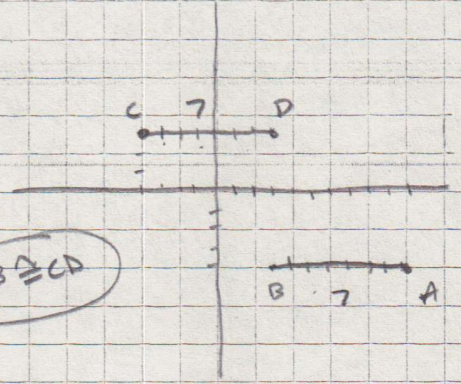
$$\frac{8x}{8} = \frac{112}{8}$$

$$x = 14$$



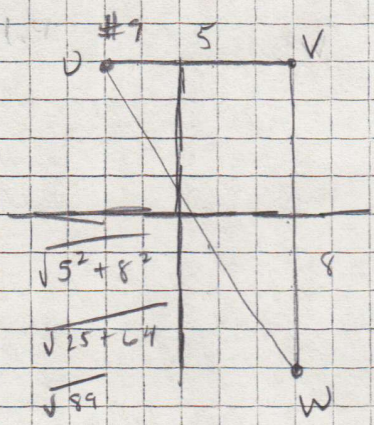
$AB \cong CD$

25



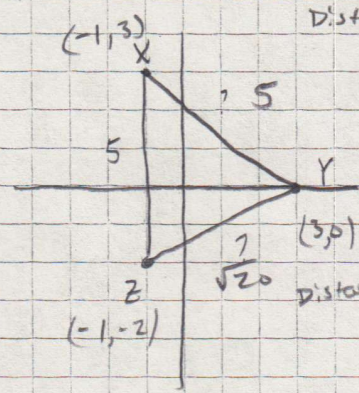
$AB \cong CD$

1.4



1.4

#10



Distance

$$XY = \sqrt{(3 - (-1))^2 + (0 - 3)^2}$$

$$= \sqrt{4^2 + (-3)^2}$$

$$= \sqrt{16 + 9} = \sqrt{25}$$

$$= 5$$

Distance

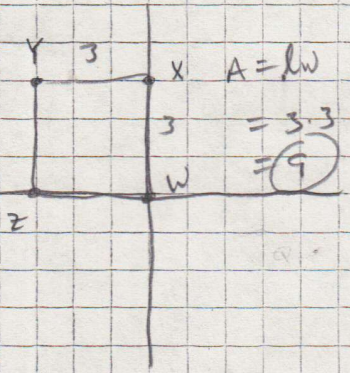
$$YZ = \sqrt{(3 - (-1))^2 + (0 - (-2))^2}$$

$$= \sqrt{4^2 + 2^2}$$

$$= \sqrt{16 + 4} = \sqrt{20}$$

1.4

#15



#16

