

Name Key

Geometry Test Review:

Language of Geometry

1. True or False:

A. $\angle 1 \cong \angle 5$

F

B. $\angle 6 \cong \angle 8$

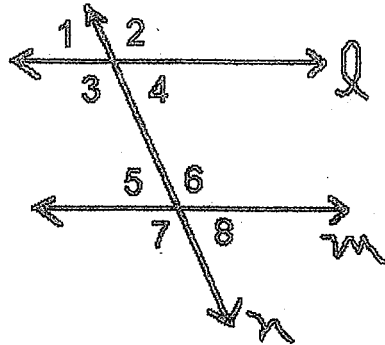
F

C. $\angle 7 \cong \angle 2$

T

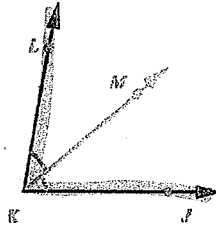
D. $\angle 1 \cong \angle 7$

F



2. Name all angles congruent to $\angle 1$: $\angle 4, \angle 5, \angle 8$

\overline{KM} bisects $\angle LKJ$



3. $\angle LKM = (6x - 10)^\circ$ and $\angle JKM = (2x + 30)^\circ$

$x =$ 10

$m\angle LKM =$ 50 $6(10) - 10$

$m\angle JKM =$ 50 $2(10) + 30$

$m\angle LKJ =$ 100

$$\begin{array}{r} 6x - 10 = 2x + 30 \\ -2x \quad \quad -2x \\ \hline 4x - 10 = 30 \\ +10 \quad \quad +10 \\ \hline \end{array}$$

4. $\angle LKM = (4x + 6)^\circ$ and $\angle JKM = (2x + 24)^\circ$

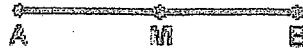
$x =$ 9

$m\angle LKJ =$ 84°

$$\begin{array}{r} 4(9) + 6 = 42 \\ 2(9) + 24 = 42 \\ \hline 84 \end{array}$$

$$\begin{array}{r} 4x = 40 \quad x = 10 \\ 4 \quad \quad 4 \\ \hline 4x + 6 = 2x + 24 \\ -2x \quad \quad -2x \\ \hline 2x + 6 = 24 \\ -6 \quad \quad -6 \\ \hline 2x = 18 \quad x = 9 \\ \frac{2}{2} \quad \frac{18}{2} \end{array}$$

M is the midpoint of \overline{AB}



5. $\overline{AM} = 12x, \overline{MB} = 8x + 24$

$x = 6$

$\overline{AM} = 72$ $12(6)$

$\overline{MB} = 72$ $8(6) + 24$

$\overline{AB} = 144$

$$\begin{array}{r} 12x = 8x + 24 \\ -8x \quad -8x \\ \hline 4x = 24 \\ \frac{4x}{4} = \frac{24}{4} \\ x = 6 \end{array}$$

6. $\overline{AM} = 5x - 2, \overline{MB} = 2x + 10$

$x = 4$

$\overline{AM} = 18$ $5(4) - 2$

$$\begin{array}{r} 5x - 2 = 2x + 10 \\ -2x \quad -2x \\ \hline 3x - 2 = 10 \\ +2 \quad +2 \\ \hline 3x = 12 \\ \frac{3x}{3} = \frac{12}{3} \\ x = 4 \end{array}$$

7. $\overline{AM} = 2x + 18, \overline{MB} = 8x$

$x = 3$ $2x + 18 = 8x$

$\overline{AB} = 48$

$2(3) + 18 = 24$
 $8(3) = 24$
 $\frac{24}{48}$

$18 = 6x$
 $\frac{18}{6} = \frac{6x}{6}$
 $3 = x$

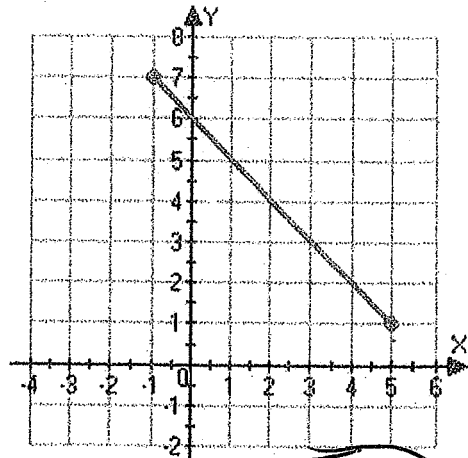
$$\begin{array}{r} 3x - 2 = 10 \\ +2 \quad +2 \\ \hline 3x = 12 \\ \frac{3x}{3} = \frac{12}{3} \\ x = 4 \end{array}$$

8. use the formula $(\frac{x+x}{2}, \frac{y+y}{2})$ to find the midpoint of the segment:

Hint:

Write the coordinates (x, y) of the endpoints first!

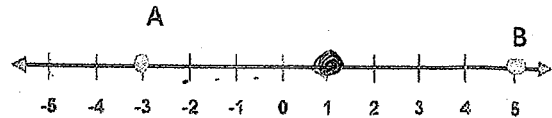
$(5, 1)$
 $(-1, 7)$



$(\frac{5+(-1)}{2}, \frac{1+7}{2}) = (2, 4)$

9. Find the midpoint of \overline{AB}

1.7



A triangle has coordinates A (2, 1) B (7, 1) and C (2, 4)

10. What is the area of the triangle? ($A = \frac{1}{2}bh$)

$$\frac{1}{2}(3)(5) =$$

$$7.5 \text{ units}^2$$

11. What is the perimeter of the triangle?

(hint - you can use the distance formula or $a^2 + b^2 = c^2$ to help you!)

$$3^2 + 5^2 = c^2$$

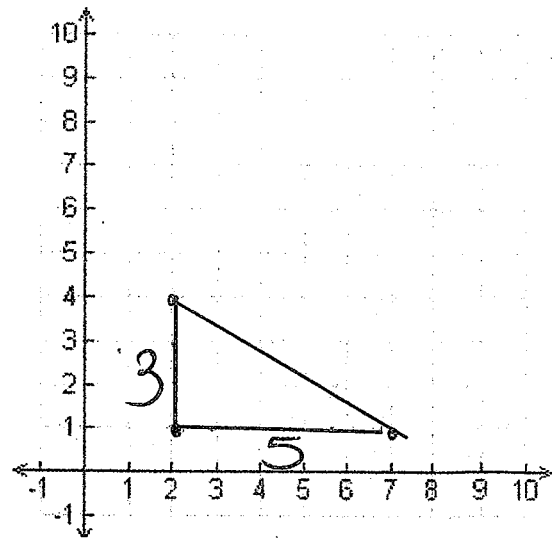
$$34 = c^2$$

$$\sqrt{34} = c$$

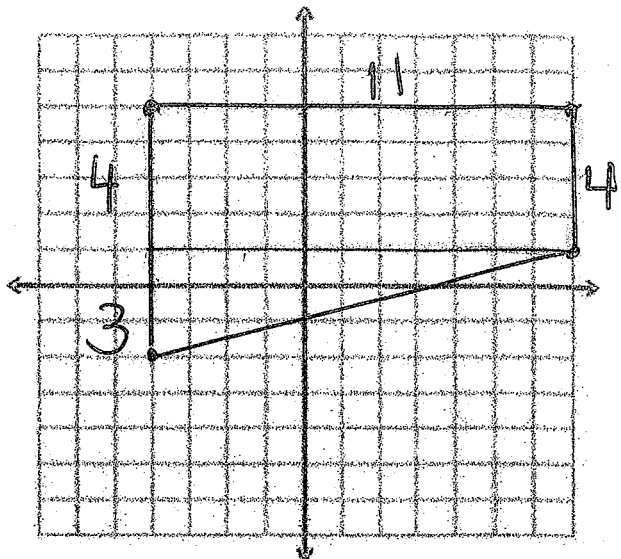
$$5.8 = c$$

$$3 + 5 + 5.8 =$$

$$13.8 \text{ units}$$



A quadrilateral has the vertices: A (-4, 5) B (7, 5) C (-4, -2) and D (7, 1).



12. What is the area of this shape?

Hints: triangle area: $(A = \frac{1}{2}bh)$

rectangle area $A = bh$

$$4(11) = 44$$

$$\frac{1}{2} \cdot 3 \cdot 11 = 16.5$$

$$44 + 16.5$$

$$60.5 \text{ units}^2$$

13. What is the perimeter of this shape? (you may use distance formula or $a^2 + b^2 = c^2$ to help you).

$$3^2 + 11^2 = x^2$$

$$130 = x^2$$

$$11.4 = x$$

top: 11

right: 4

left: 7

slant: 11.4

$$33.4 \text{ units}$$

14. Circle all lines PARALLEL to $y = -\frac{1}{4}x + 8$

$$y = 4x + 2$$

$$y = \frac{1}{4}x - 7$$

$$y = -4x + 9$$

$$y = -\frac{1}{4}x + 2$$

$$y = -\frac{1}{4}x - 8$$

$$y = 4x + 8$$

$$y = 2x - 10$$

$$y = \frac{1}{4}x + 1$$

15. circle all lines PERPENDICULAR to $y = \frac{4}{5}x - 3$

$$y = \frac{5}{4}x + 2$$

$$y = -\frac{5}{4}x - 3$$

$$y = \frac{4}{5}x + 2$$

$$y = -\frac{5}{4}x + 6$$

16. Write an equation of a line parallel to $y = 2x + 1$ through $(-1, -4)$ you can use an equation to solve for b or graph.

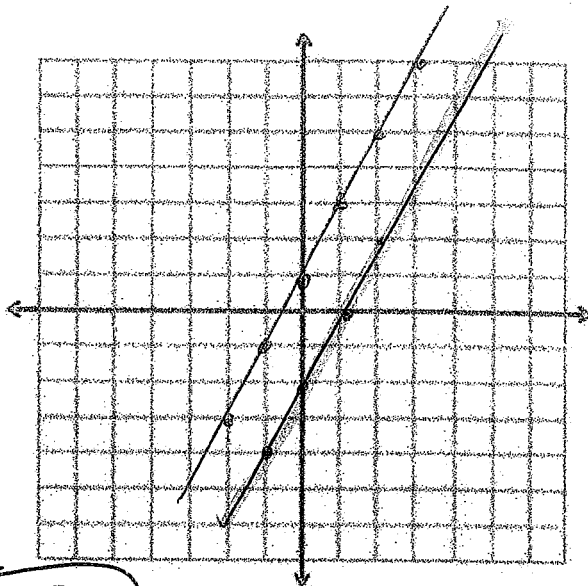
$$-4 = 2(-1) + b$$

$$-4 = -2 + b$$

$$\begin{array}{r} +2 \\ +2 \end{array}$$

$$-2 = b$$

$$y = 2x - 2$$



17. Write an equation of a line parallel to $y = \frac{1}{3}x - 6$ through $(6, 3)$ you can use an equation to solve for b or graph.

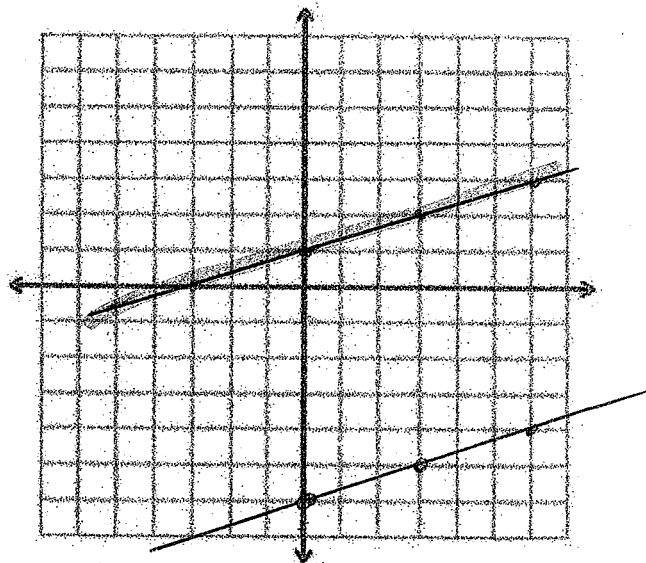
$$3 = \frac{1}{3}(6) + b$$

$$3 = 2 + b$$

$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$1 = b$$

$$y = \frac{1}{3}x + 1$$



18. Write an equation of a line perpendicular to $y = 2x + 3$ through $(4, -2)$ you can use an equation to solve for b or graph.

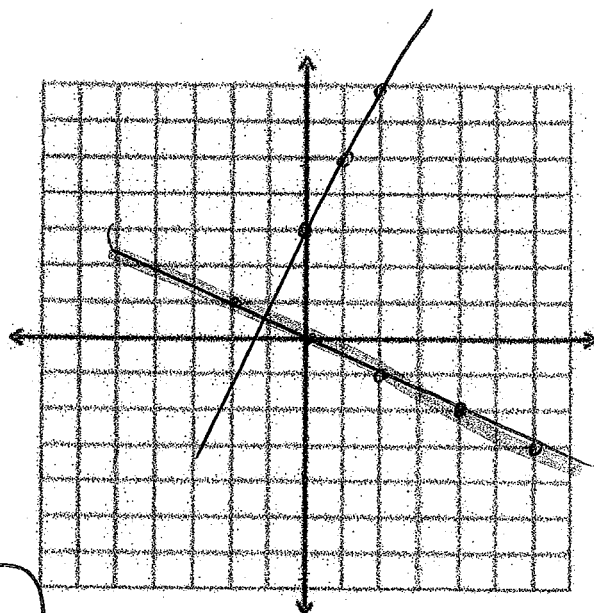
$$-2 = -\frac{1}{2}(4) + b$$

$$-2 = -2 + b$$

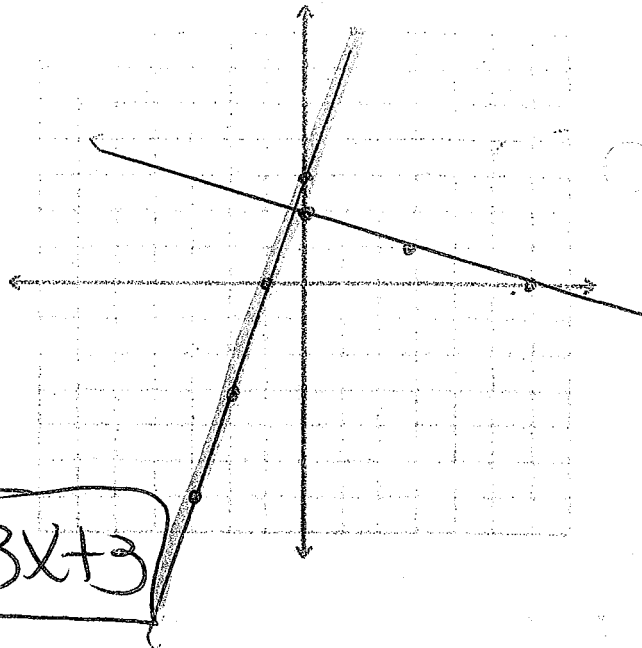
$$\begin{array}{r} +2 \\ +2 \end{array}$$

$$0 = b$$

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



19. Write an equation of a line perpendicular to $y = -\frac{1}{3}x + 2$ through $(-3, -6)$. you can use an equation to solve for b or graph.



$$-6 = 3(-3) + b$$

$$-6 = -9 + b$$

$$+9 \quad +9$$

$$3 = b$$

$$y = 3x + 3$$

20. Find the midpoint of segment RT

$$R(2, 3) \quad T(8, 5)$$

$$\left(\frac{2+8}{2}, \frac{3+5}{2} \right)$$

$$(5, 4)$$

