

Name: MR. SCEVOLA

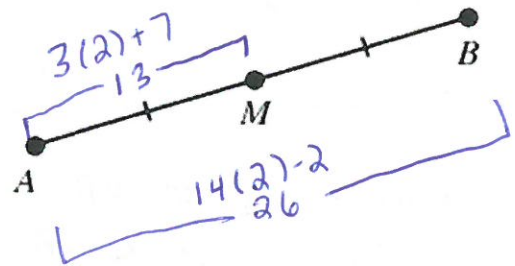
Period: _____

Date: 9/2014

Geometry Honors: Midpoint and Distance Homework

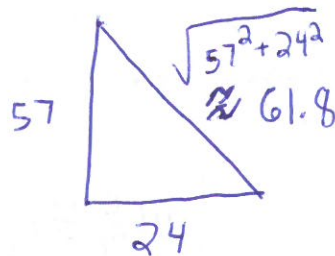
1. Find the length of MB if $AM = 3x + 7$ and $AB = 14x - 2$.

$$\begin{aligned}
 2AM &= AB \\
 2(3x+7) &= 14x-2 \\
 6x+14 &= 14x-2 \\
 -6x+2 & \quad -6x+2 \\
 \frac{16}{8} &= \frac{8x}{8} \rightarrow \boxed{x=2}
 \end{aligned}$$

2. Find the distance between the points $(x^2, 2x^2)$ and $(4x^2, -2x^2)$ in terms of x .

$$\begin{aligned}
 &\sqrt{(x^2-4x^2)^2 + (2x^2--2x^2)^2} \\
 &\sqrt{(-3x^2)^2 + (4x^2)^2} \\
 &\sqrt{9x^4 + 16x^4} = \sqrt{25x^4} = \sqrt{25} \sqrt{x^4} = \boxed{5x^2}
 \end{aligned}$$

3. If you set out to sail 57 miles south and 24 miles west, how much extra sailing did you do compared to if you sailed to directly (in a straight line) to your end location.



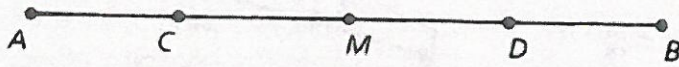
$$\begin{aligned}
 (57+24) - 61.8 \\
 81 - 61.8 \\
 = \boxed{19.2}
 \end{aligned}$$

4. Indicate and correct the error for finding the distance between $(6, 2)$ and $(1, -4)$.

$$\begin{aligned}
 \times \quad AB &= (6-1)^2 + [2-(-4)]^2 \\
 &= 5^2 + 6^2 \\
 &= 25 + 36 \\
 &= 61
 \end{aligned}$$

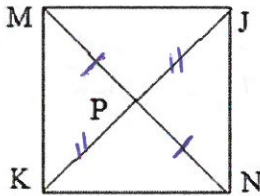
$$\begin{aligned}
 \times \quad AB &= \sqrt{(6-2)^2 + [1-(-4)]^2} \\
 &= \sqrt{4^2 + 5^2} \\
 &= \sqrt{16 + 25} \\
 &= \sqrt{41} \\
 &\approx 6.4
 \end{aligned}$$

5. **HOW DO YOU SEE IT?** \overline{AB} contains midpoint M and points C and D , as shown. Compare the lengths. If you cannot draw a conclusion, write *impossible to tell*. Explain your reasoning.



- a. AM and MB $AM = MB$
 b. AC and MB $AC < MB$
 c. MC and MD impossible
 d. MB and DB $MB > DB$

6. Given: P is the midpoint of \overline{MN}
 \overline{MN} bisects \overline{KJ}
 Prove: $\overline{KP} \cong \overline{PN}$



Statements	Reasons
P is a midpoint of \overline{MN}	Given
\overline{MN} bisects \overline{KJ}	Given
$\overline{PM} \cong \overline{PN}$	Def of Midpoint.
$\overline{KP} \cong \overline{PJ}$	Def of a Bisector

Not enough info

Also complete p. 37 1-8 and p. 504 1-8.

Username: scevgeo

Password: *****

- p. 37
 1) (3, 4)
 2) (-9, 3/2)
 3) (1/2, 1/2)
 4) (-6, 44)
 5) Much Truth
 6) ~~...~~
 Divide by 3 by (6, 4)
 7) Find Midpoint, then midpoint from endpoint to midpoint

- a) $(\frac{11}{2}, \frac{13}{2})$
 (16, 13.5)
 (59.5, 11)
 b) They are the same
 p. 504
 1) 5
 2) 45
 3) 34
 4) $\approx 353m$
 5) $10 + 20 + 22.4 = 52.4$
 6) isosceles

- 7) $AB = \sqrt{10}$ $-\frac{1}{3}$
 $BC = \sqrt{40}$ 3
 $CD = \sqrt{10}$ $-\frac{1}{3}$
 $AD = \sqrt{40}$ 3
 Rectangle
 8) $EF = 5$ $3/4$
 $FG = 3\sqrt{2}$ -1
 $GH = 5$ $3/4$
 $EH = 3\sqrt{2}$ -1
 Parallelogram.