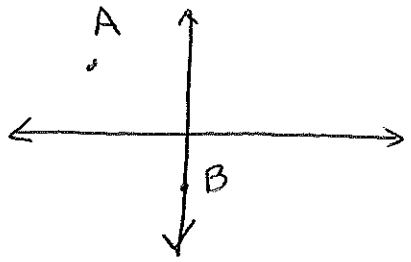
QII version

Key

Math 118 - Dr. Miller - Quiz #12: Coordinate Geometry - **In-Class, Monday, 04/07/14**

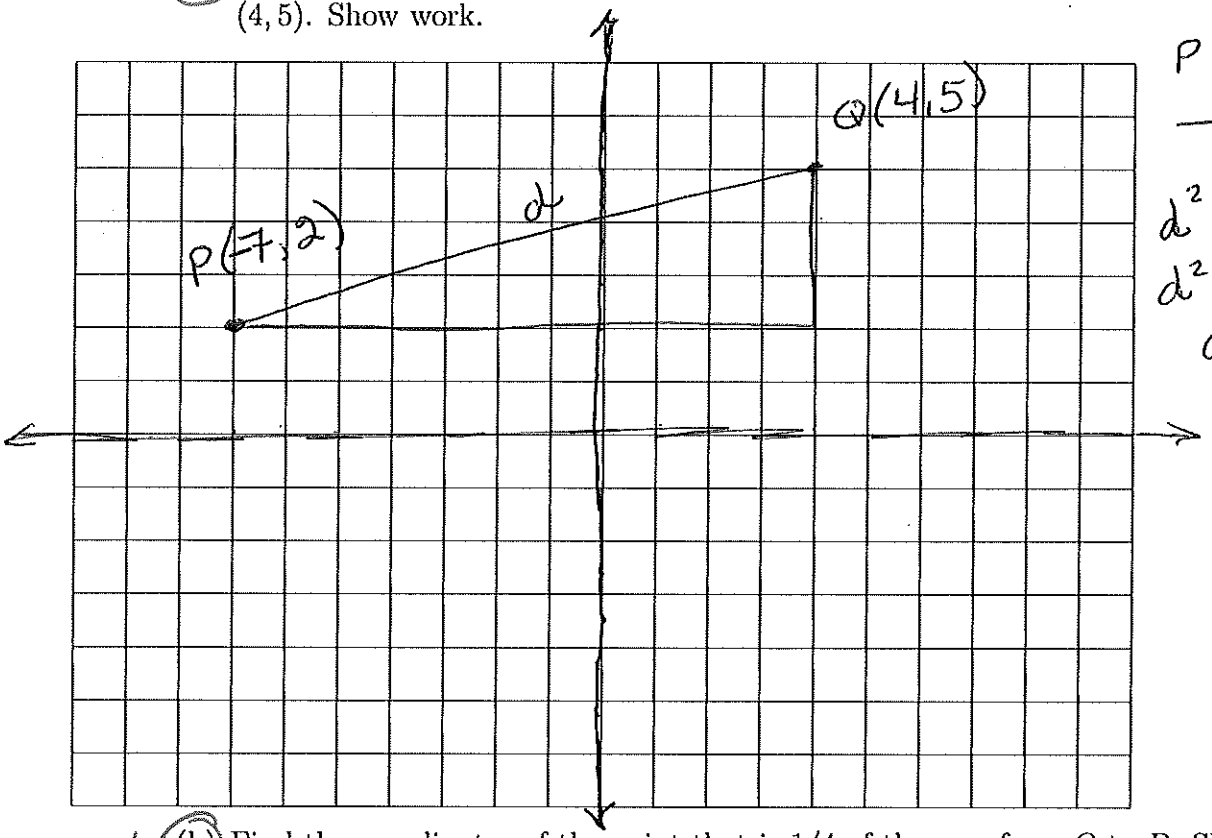
1. If point A is in Quadrant II and point B is on the negative y-axis, give all possible locations (quadrants, positive and negative axes) where the midpoint of $\overline{AB}$ could lie. .5

Quadrant II
Q III
or negative x-axis



.5

2. (a) Find the distance, rounded to the nearest tenth, between $P = (-7, 2)$ and $Q = (4, 5)$. Show work.



P to Q
→ 11 ↑ 3

$d^2 = 11^2 + 3^2$
$d^2 = 121 + 9$
$d^2 = 130$
$d = \sqrt{130}$
$d = 11.4$

1 (b) Find the coordinates of the point that is 1/4 of the way from Q to P. Show work.

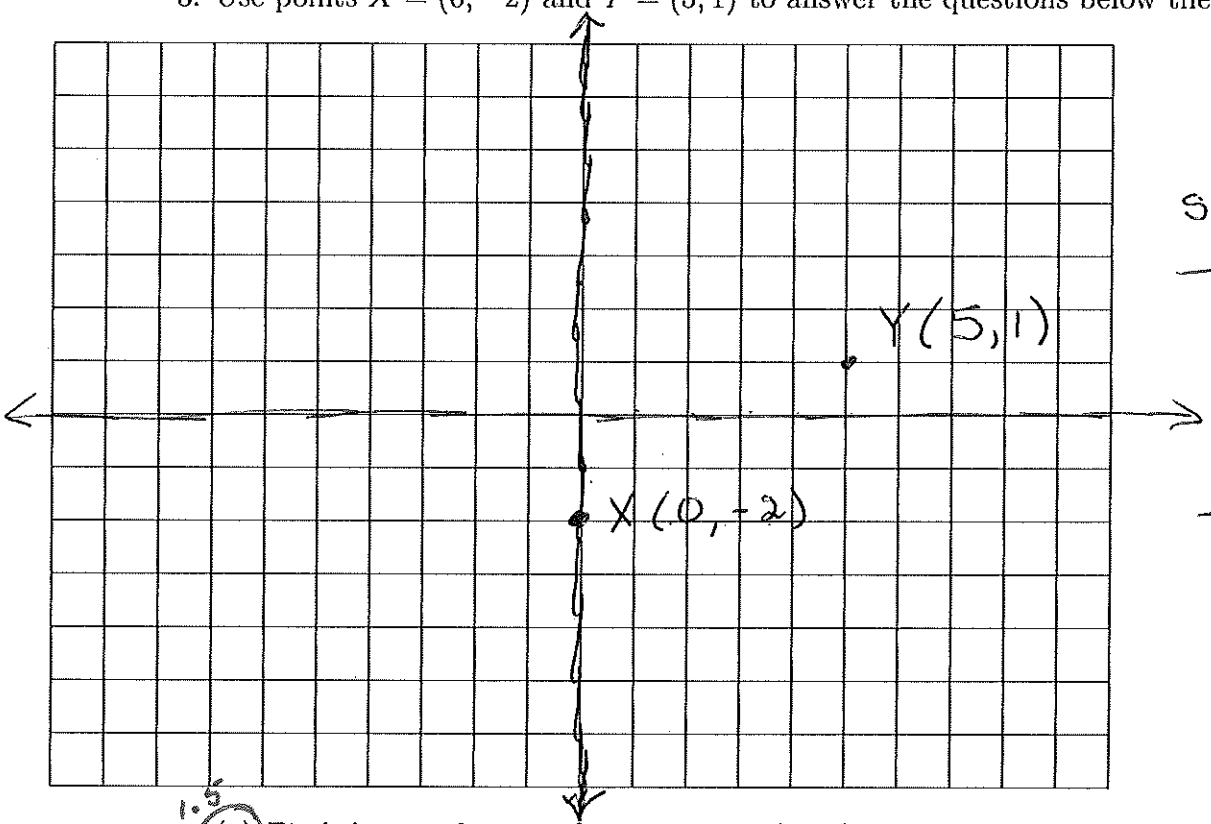
Start @ Q = (4, 5)
Move ← 2.75 ↓ .75
End @ (1.25, 4.25)

Move $\frac{1}{4}$ of ← 11, ↓ 3

Answer:
(1.25, 4.25)
or
$(1\frac{1}{4}, 4\frac{1}{4})$
or
$(\frac{5}{4}, \frac{17}{4})$

VII revision

3. Use points $X = (0, -2)$ and $Y = (5, 1)$ to answer the questions below the grid.



slope X to Y is
→5, ↑3
$\frac{3}{5}$

⊥ slope is
$\frac{-5}{3}$ or $\frac{5}{-3}$

1.5

(a) Find the coordinates of a point Z so that $\triangle XYZ$ is an isosceles right triangle with right angle at Y. Show work as needed, but at least write your answer HERE.

Start @ Y(5,1)
→3 ↓5
Move 1Δ
End @ Z(8,-4)

OR

Start @ Y(5,1)
←3 ↑5
Move 1Δ
End @ Z(2,6)

Answers: (8,-4) or (2,6)

1.5

(b) If $M = (2, 2)$, find the coordinates of a point K so that $\overleftrightarrow{XY} \| \overleftrightarrow{KM}$ and $2KM = 5XY$.

Start @ M = (2,2)
Move →12.5 ↑7.5
End @ K = (14.5, 9.5)

KM = 2.5 XY
start @ M (2,2)
Move ←12.5 ↓7.5
to end @ (-10.5, -5.5)

Move 2.5 times
→5 ↑3
or ←5 ↓3

Answers:
(14.5, 9.5)
or
(-10.5, -5.5)

QIV version

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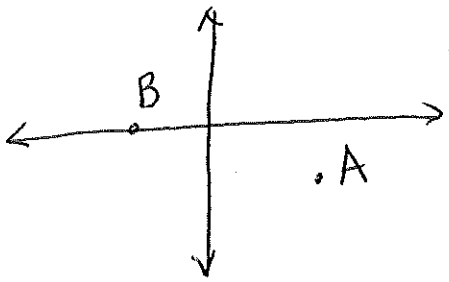
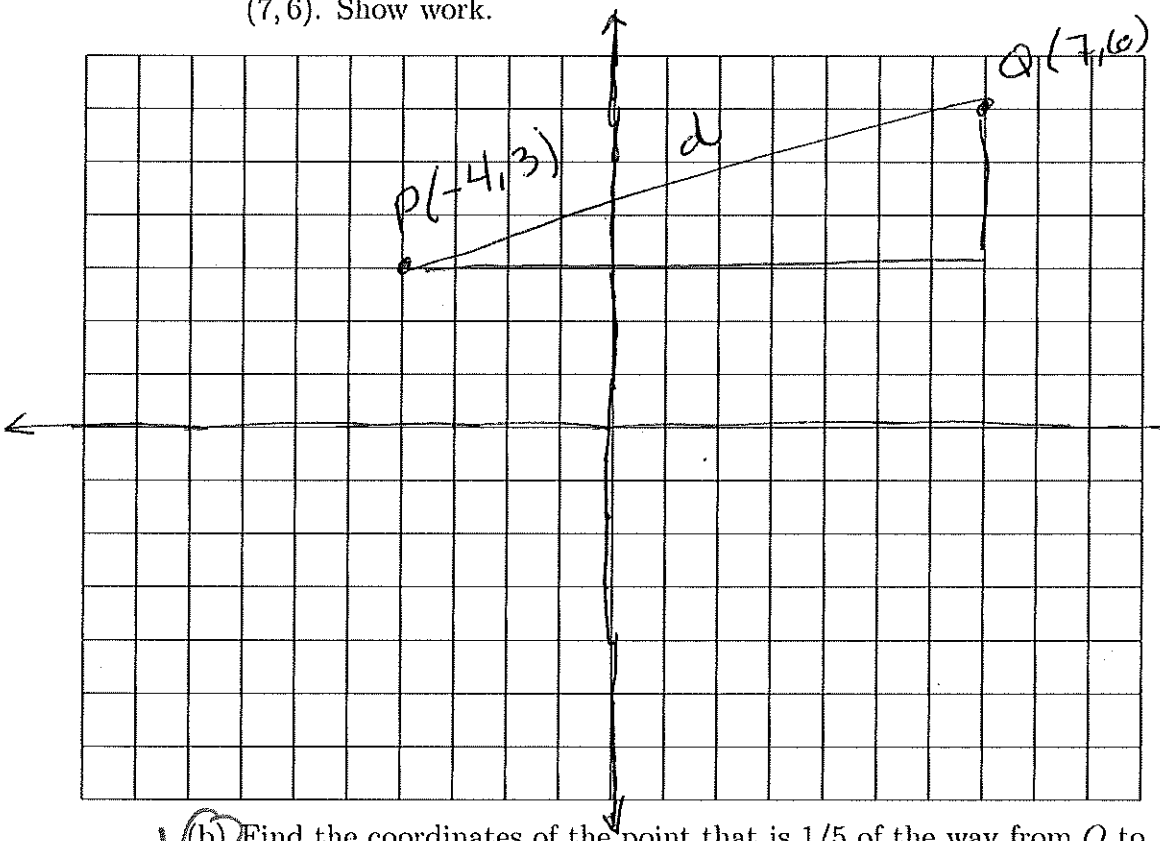
1 If point A is in Quadrant IV and point B is on the negative x-axis, give all possible locations (quadrants, positive and negative axes) where the midpoint of $\overline{AB}$ could lie. .5

-1/2 any error

Quadrant III
Q IV
or negative y-axis



.5 2 (a) Find the distance, rounded to the nearest tenth, between $P = (-4, 3)$ and $Q = (7, 6)$. Show work.



P to Q:
→ 11 ↑ 3

$d^2 = 11^2 + 3^2$

$d^2 = 121 + 9$

$d^2 = 130$

$d = \sqrt{130}$

$d = 11.4$

1 (b) Find the coordinates of the point that is 1/5 of the way from Q to P. Show work.

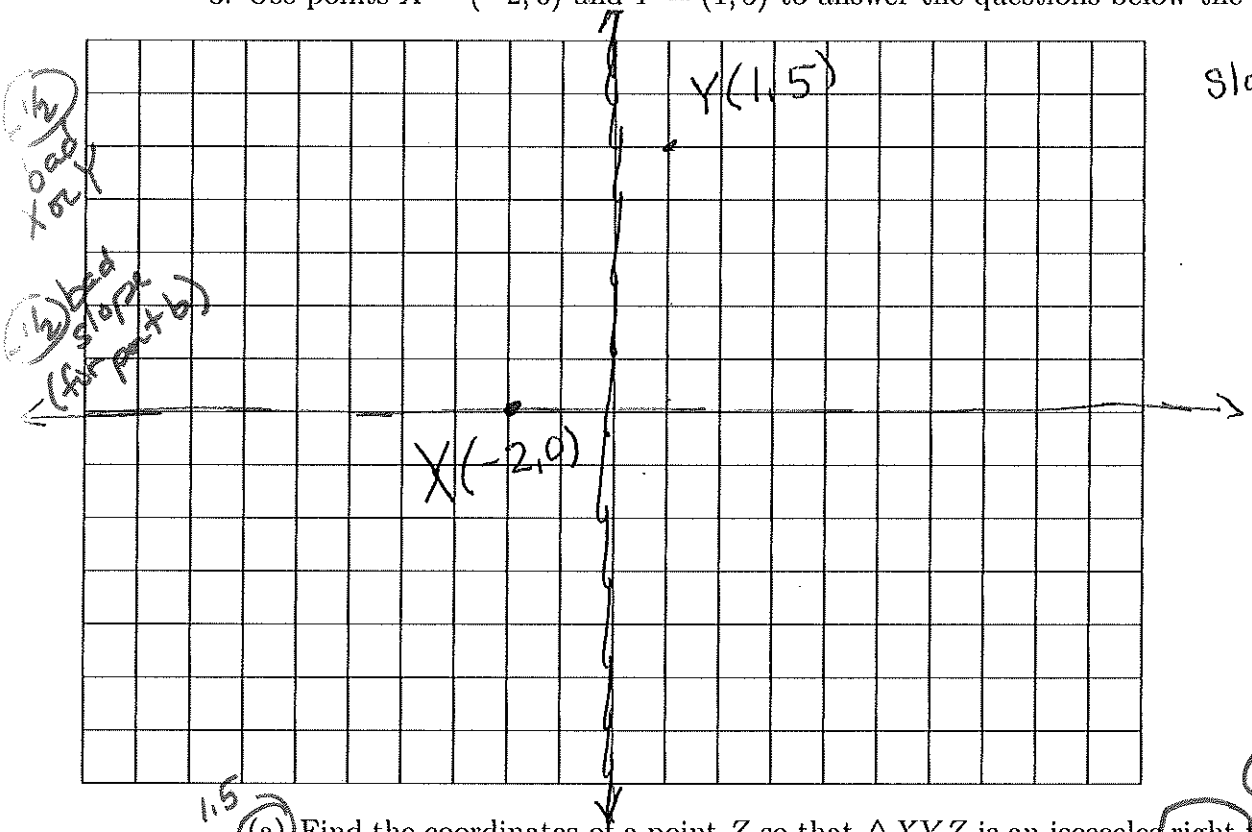
Start @ Q (7, 6)
Move ←2.2 ↓.6
End @ (4.8, 5.4)

Move $\frac{1}{5}$ of ↓3 ←11
so ↓.6 ← 2.2

Answer:
(4.8, 5.4)
or
$(4\frac{4}{5}, 5\frac{2}{5})$
or
$(\frac{24}{5}, \frac{27}{5})$

(VIII vision)

3. Use points $X = (-2, 0)$ and $Y = (1, 5)$ to answer the questions below the grid.



(½ add X or Y)

(½ find slope (for part b))

slope X to Y
→3 ↑5
$\frac{5}{3}$

± slope is
$\frac{-3}{5}$ or $\frac{3}{-5}$

1.5

(a) Find the coordinates of a point Z so that $\triangle XYZ$ is an isosceles right triangle with right angle at Y. Show work as needed, but at least write your answer HERE. (-1)

Start @ Y (1,5)
Move →5 ↓3
10
End @ Z (6, 2)

or

Start @ Y (1,5)
Move ←5 ↑3
End @ Z (-4, 8)

Answers: (6, 2) or (-4, 8)

1.5

(b) If $M = (2, 2)$, find the coordinates of a point K so that $\overleftrightarrow{XY} \| \overleftrightarrow{KM}$ and $5KM = 2XY$. (-1 to -½)

KM = .4 XY

Start @ M (2, 2)
Move →1.2 ↑2
End @ (3.2, 4)

or

Start @ M (2, 2)
Move ←1.2 ↓2
End @ (0.8, 0)

move .4 times
→3 ↑5

Answers:
(3.2, 4)
or (0.8, 0)