Calculus Section A-2 pg A15

1. $(2,1)\ (4,5)$

a)

b) $D = \sqrt{4^2+2^2}$

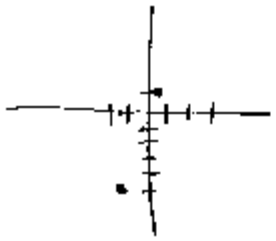
$= \sqrt{20} = \sqrt{4}\sqrt{5}$

$= \boxed{2\sqrt{5}}$

c) $M.P. = \left(\frac{6}{2}, \frac{6}{2}\right)$

$= \boxed{(3,3)}$

3. $\left(\frac{1}{2}, 1\right)\ \left(-\frac{3}{2}, -5\right)$



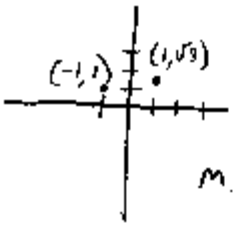
$D = \sqrt{(2)^2+(6)^2}$

$= \sqrt{4+36} = \sqrt{40}$

$= 2\sqrt{10}$

$MP = (-1,-2)$

5.



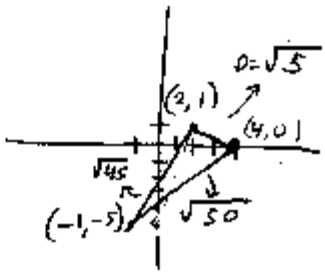
$D = \sqrt{2^2+(\sqrt{3}-1)^2}$

$= \sqrt{4+3-2\sqrt{3}+1}$

$= \sqrt{8-2\sqrt{3}}$

$M.P. = \left(0, \frac{\sqrt{3}+1}{2}\right)$

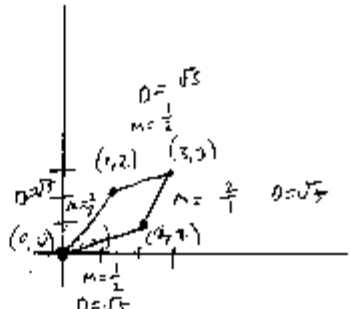
7.



$\left(\sqrt{45}\right)^2 + \left(\sqrt{5}\right)^2 = \sqrt{50}^2$

Yes it is a Rt.

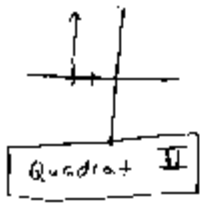
9.



If a rhombus – opposite sides have same slope all sides have same length. They do, as shown in the q therefore yes

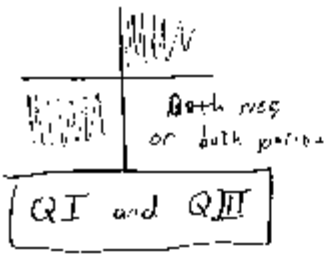
Appendix A.4 (cont)

11. $x = -2 \quad y > 0$



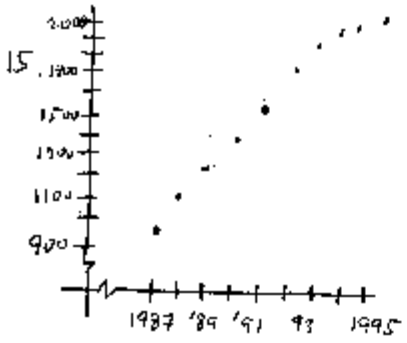
Quadrant II

13 $xy > 0$



QI and QIII

15.



17. $(0,-4) \quad (2,0) \quad (3,2)$

If on the same line the distance between the two ends will equal the sum of the segments.

$D_{1,2} = \sqrt{20} = 2\sqrt{5}$

$D_{2,3} = \sqrt{5} = \sqrt{5}$

$D_{1,3} = \sqrt{45} = 3\sqrt{5}$

$2\sqrt{5} + \sqrt{5} = 3\sqrt{5}$

Therefore the ~~three~~ points are on the same line

19. same reasoning as 17

$(-2,1) \quad (-1,0) \quad (3,-2)$

$D_{1,2} = \sqrt{2}$

$D_{2,3} = \sqrt{9+9} = \sqrt{18}$

$D_{1,3} = \sqrt{16+9} = \sqrt{25} = 5$

$\sqrt{2} + \sqrt{18} \neq 5$

Not on the same line

21 $(0,0) \quad (x,-4)$

$\sqrt{x^2+4^2} = 5$

$\sqrt{x^2+16} = 5$

$x^2+16 = 25$

$x^2 = 9$

$x = 3$ or $x = -3$

23. $(0,0) \quad (3,y)$

$\sqrt{9+y^2} = 8$

$9+y^2 = 64$

$y^2 = 55$

$y = \pm\sqrt{55}$

25 Divide $(x_1,y_1) \quad (x_2,y_2)$ ...

four equal parts. $\left(\frac{2x_2}{2}, \frac{2y_2}{2}\right)$ Left

$\left(\frac{2x_1}{2}, \frac{2y_1}{2}\right) \quad \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

$\left(\frac{3x_1+x_2}{4}, \frac{3y_1+y_2}{4}\right)$ 2,

$\left(\frac{x_1+3x_2}{4}, \frac{y_1+3y_2}{4}\right)$ 3,

Find a common denom... add and divide by 2.

26 a) $(1,-2)$ $(4,-1)$

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

$\left(\frac{7}{4}, -\frac{7}{4}\right)$

$\left(\frac{13}{4}, -\frac{5}{4}\right)$

b) $(-2,-3)$ $(0,0)$

$\left(-1, -\frac{3}{2}\right)$

$\left(-\frac{3}{2}, -\frac{9}{4}\right)$

$\left(-\frac{1}{2}, -\frac{3}{4}\right)$

27. (C)

28. b

29. a

30. d

31. Center $(0,0)$

radius $= 3$

$x^2+y^2=9$

3 $(x-2)^2+(y+1)^2=16$

35. $(-1,2)$ Point on circle

$r=\sqrt{1+4}=\sqrt{5}$

$(x+1)^2+(y-2)^2=5$

55 True

56 False $\sqrt{(26)^2} = |26|$

57 True

58. True