MATH 5071 - Problem Set 8

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Due: 2014 July 21

1) Solve the following equations for x:

i) $\frac{3}{x-5} + 4x = 1$

ii) $\frac{x}{2x+1} = -\frac{4}{5-2x}$

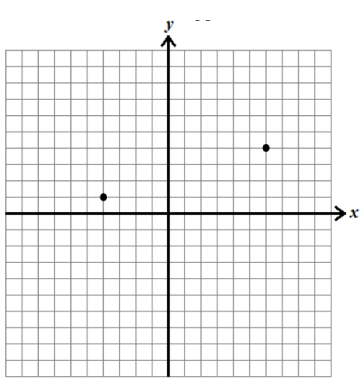
iii) $\sqrt{3x+10} + 25 = 16$

iv) $\sqrt{x+9} - \sqrt{5x+3} = 0$

2) Find the distance between the following points:

i) $(8, 1)$ and $(4, 4)$

ii) $(-2, 1)$ and $(-4, -5)$



3) Graph on the complex plane:

i) $4 + 2i$

ii) -2

iii) $1 - 2i$

iv) $-4i$

v) $-5 - 2i$

vi) $-1 + 2i$

vii) $3 + i$

4) Evaluate the following expressions:

i) $|4 + 2i|$

ii) $|-2|$

iii) $|1 - 2i|$

iv) $|-4i|$

v) $|-5 - 2i|$

vi) $|-1 + 2i|$

vii) $|3 + i|$

5) Find the equation of the line...

i) that has slope $= 1$ and y-intercept $= -1$.

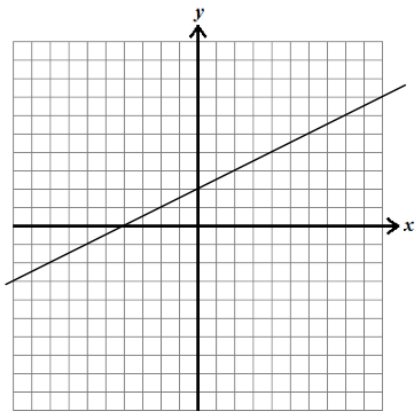
ii) that passes through the points $(1, -1)$ and $(-3, 7)$.

6) Find the slope and y-intercept of the following lines:

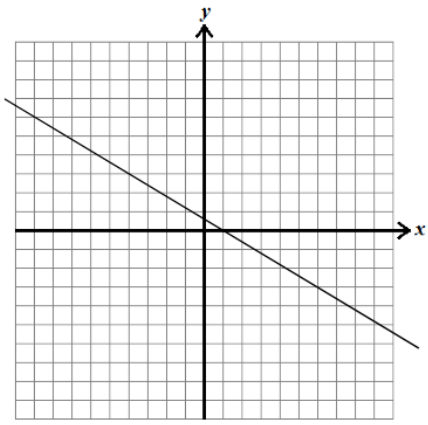
i) $2x - 5y = -8$

ii) The line that passes through $(-2, 3)$ and (3,1)

(a) iii



(b) iv



7) Solve the following systems of equations by graphing. Check that your answer satisfies both equations.

i) $\begin{cases} -x + y = -11 \\ 9x - 2y = 71 \end{cases}$

ii) $\begin{cases} x + y = -1 \\ 6x - 7y = -45 \end{cases}$

iii) $\begin{cases} -4x - 3y = 17 \\ -8x - 5y = 31 \end{cases}$

iv) $\begin{cases} 7x + 3y = 6 \\ 6x - 5y = 43 \end{cases}$