Algebra Revision Test

Mr A Ryan *Tuesday, 16 Dec 2014* *Name* _____

Question 1

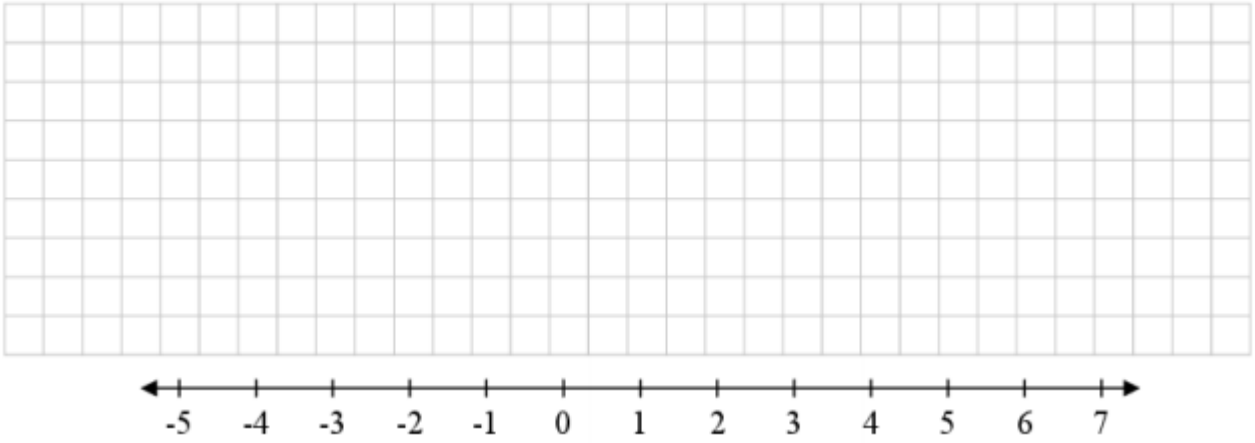
Simplify the following expressions:

$$\frac{2x^2 + 5x - 3}{2x^2 + x - 1}$$

Question 2

Solve the following inequality and show the solution on the number line.

$$-17 \leq 1 - 3x < 13, \quad x \in \mathbb{Z}$$



Question 3

Divide $2x^3 + x^2 - 13x + 6$ by $x + 3$.

Question 4

Find two possible values of x, **correct to two decimal places**

$$\frac{3}{x-1} - \frac{2}{x+3} = 1$$

Question 5

Megan thinks of a number. She adds 15 and then doubles her result. Sean's starting number is 5 more than Megan's starting number. He trebles his and then takes off 6. Both of them end up with the same number. What numbers did they each think of?

Question 7

The volume of a cone (V) is given by the formula:

$$V = \frac{\pi r^2 h}{3}$$

...where r is the radius and h is the height.

Find the radius of the cone to one decimal place if the volume is $100cm^3$ and the height is 8cm.

Question 8

Solve the simultaneous equations:

$$2x - 3y = 18$$
$$5x + 9y = -10.$$