Revision: Manipulation of Variables

1. Re arrange the following equations to make y the dependent variable

1. $3x = 6y - 9$

   $y = \frac{x+3}{2}$

2. $4y - 2x = 6$

   $y = \frac{3+x}{2}$

3. $\frac{3y}{x} = 6$

   $y = 2x$

4. $\frac{3y}{(x-1)} = 6$

   $y = 2(x-1)$

5. $\frac{3y+2}{(x-1)} = 6$

   $y = \frac{2(3x-4)}{3}$

6. $4x + 3 = 2(y-1)$

   $y = \frac{4x+5}{2}$

2. What is the value of y in each of the above equations if $= 4$?

1. $7/2$
2. $7/2$
3. 8
4. 6
5. $16/3$
6. $21/2$

3. Factorise the following expressions:

1. $2x^2 - x = x(2x-1), x = 0 \; and \; x = 0.5$
2. $4x^3 + 8x^2 = 4x^2(x+2), x = 0 \; and \; x = -2$
3. $x^2 + 8x + 7 = (x+1)(x+7), x = -1 \; and \; x = -7$
4. $2x^2 + 16x + 14 = 2(x+1)(x+7), x - 1 \; and \; x = -7$

5. $x^2 - 5x + 6 = (x-3)(x-2), x = 3 \; and \; x = 2$
6. $x^2 - x - 12 = (x+3)(x-4), x = -3 \; and \; x = 4$

Hence, what would be the possible values of $\boldsymbol{x}$ in each of the above expressions if they equalled zero? See above

END