

## MPM1DI Exponents, Algebra and Equations

1. Simplify and then evaluate:

a)  $\frac{8^{-5} \times 8^{22}}{(8^{-3})^{-5}}$

b)  $\frac{(-3x^3y^3)^4}{-9x^7y^{10}}$ ,  $x = -1$ ,  $y = -2$

2. Simplify:

a)  $\frac{(3x^{-7}y)(-4xy^5)}{6x^{-6}y^2}$

b)  $5y^2(4y^2 - 6y) - 3y(2y^3 - 7y)$

c)  $\left(\frac{15x^3y^2 - 25x^2y^3}{5x^2y^2}\right) - \left(\frac{16x - 4y}{4}\right)$

3. Solve the following equations:

a)  $3(x - 1) - 2(5x + 2) = 0$

b)  $0.4(0.3x - 2) = 0.4 - 0.08x$

c)  $x \cdot x + x(3x) + 5(2) = 74$ ,  $x > 0$

4. Solve the following equation and check your answer.

$$\frac{4x-2}{5} + \frac{1}{10} = \frac{3x+7}{2} - 1$$