# MTH151 Practice Problems #1

**Aug 29, 2008**
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1. Solve $2x - 3 = 5$.

*Answer*: $x = 4$

2. Solve $-3x + 4 = 6$.

*Answer*: $x = -\frac{2}{3}$

3. Solve $\frac{1}{2}x - 1 = \frac{2}{3}$.

*Answer*: $x = \frac{10}{3}$

4. Simplify $(x^2y)(x^3y^4)$ (write everything in positive exponents).

*Answer*: $x^5y^5$

5. Simplify $\frac{x^3y^2}{x^2y^5}$ (write everything in positive exponents).

*Answer*: $\frac{x}{y^3}$

6. Simplify $(5^2 - 1)^0$.

*Answer*: 1

7. Simplify $\frac{x^{-5}y^2}{x^3y^{-1}}$ (write everything in positive exponents).

*Answer*: $\frac{y^3}{x^8}$

8. Simplify $(x^2y)^3$ (write everything in positive exponents).

*Answer*: $x^6y^3$

9. Simplify $\frac{(x^2y)^{-1}}{x^3y^2}$ (write everything in positive exponents).

*Answer*: $\frac{1}{x^5y^3}$

10. Simplify $\frac{1-\frac{1}{x}}{1+\frac{1}{x}}$.

*Answer*:

$$\frac{1-\frac{1}{x}}{1+\frac{1}{x}} = \frac{\frac{x}{x}-\frac{1}{x}}{\frac{x}{x}+\frac{1}{x}} = \frac{\frac{x-1}{x}}{\frac{x+1}{x}} = \frac{x-1}{x} \cdot \frac{x}{x+1} = \frac{x-1}{x+1}$$