1. Simplify the following expressions:
   (a) $1 + 1 + 1 + 1 + 1 \times 0$

   (b) $7 + 7 \div 7 + 7 \times 7 - 7$

   (c) $6 \div 2(1 + 2)$

   (d) $9 - 3 \times \frac{1}{3} + 1$

2. Write the following expressions as one fraction (simplify as much as possible):
   (a) $\dfrac{3}{10} + \dfrac{4}{15}$

   (b) $\dfrac{3}{10} \cdot \dfrac{4}{15}$

   (c) $\dfrac{\frac{3}{10}}{\frac{4}{15}}$

3. Simplify $8(2x + 5) - 7(x - 9)$

4. Multiply $(2x + 5)^2$

5. Factor:
   (a) $x^2 - 4x + 4$

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Last updated September 27, 2018

(b) $9x^2 - 16$

(c) $2x^2 - 5x - 3$

(d) $x^3 + 8$

6. Consider the line $y = -2x + 3$.

   (a) What is the slope of the line? What is the y-intercept of the line?

   (b) Sketch the graph of the line.

Challenge (Optional)

7. Write the following expressions as one fraction (simplify as much as possible):

   (a) $\dfrac{1}{x} - \dfrac{2}{x(x+1)}$

   (b) $\dfrac{x-4}{x^2-4} \div \dfrac{x^2-3x-4}{x^2+5x+6}$