

Directions: Please answer the following questions. **Show work!!**

1. Simplify  $3(m^3p^{-2})^5$

2. Simplify  $(2m^3)^4$

3. Simplify  $(4a^0b^4)^2$

4. Simplify  $(xy^3)^{-1}$

5. Simplify  $(3m^{-4}n) \cdot (m^2n)$

6. Simplify  $(x^2)^5 \cdot \left(\frac{4x^2}{y}\right)^3$

7. Simplify  $\frac{5c^2}{c^3d} \cdot \frac{2c^5}{d^7}$

8. Simplify  $\frac{6m^2}{m^{-3}}$

9. Add  $\frac{5}{6} + \frac{1}{8}$

10. Multiply  $\frac{3}{5} \cdot \frac{20}{21}$

11. Subtract  $\frac{3}{10} - \frac{8}{9}$

12. Divide  $\frac{5}{12} \div \frac{7}{8}$

13. Evaluate the following expressions given the functions below.

$$f(x) = 14x - 3$$

$$g(x) = \frac{1}{2}x + 5$$

$$p(x) = x^2 + 8$$

$$q(x) = 3x^2 - 8$$

$p(-4)$	$g(-22)$	$f(3)$
$q(2)$	$p(7)$	$g(45)$

Solve the equations.

14.  $3(5x - 7) + 17 = -64$

15.  $\frac{5}{9}x = 120$