

Name _____

Show your work on all problems, and leave your solutions in the simplest form possible.

Subtract

$$1. -3 - (-4) = -3 + 4 = \boxed{1}$$

Divide

$$2. \frac{3}{5} \div (-5) = \frac{3}{5} \div \frac{-5}{1}$$

$$= \frac{3}{5} \times \frac{1}{-5} = \boxed{\frac{3}{-25}}$$

Calculate using rules for order of operations

$$3. \left[\frac{2}{3} \div (-11) \right] \times \left(\frac{4}{5} \right)$$

$$= \left[\frac{2}{3} \times \frac{1}{-11} \right] \left(\frac{4}{5} \right)$$

$$= \left[\frac{2}{-33} \right] \left[\frac{4}{5} \right] = \boxed{\frac{8}{-165}}$$

$$4. \frac{7 \times 3^2 - 5}{9 + 4 \times 2}$$

$$= \frac{7 \times 9 - 5}{9 + 8}$$

$$= \frac{63 - 5}{17}$$

$$= \boxed{\frac{58}{17}}$$

$$5. \frac{(2-3)^3 - 5|2-3|}{7 - 2^2 \times 5}$$

$$= \frac{(-1)^3 - 5|-1|}{7 - 4 \times 5}$$

$$= \frac{-1 - 5(1)}{7 - 20}$$

$$= \frac{-6}{-13} = \boxed{\frac{6}{13}}$$

Solve for y and check your solution

$$6. 4(y+2) = 24y$$

$$4y + 8 = 24y$$

$$-4y \quad = -4y$$

$$8 = 20y$$

$$\frac{8}{20} = \frac{20y}{20}$$

$$\boxed{y = \frac{2}{5}}$$

$$4\left(\frac{2}{5} + 2\right) \stackrel{?}{=} 24\left(\frac{2}{5}\right)$$

$$4\left(\frac{2}{5} + \frac{10}{5}\right) \stackrel{?}{=} \frac{48}{5}$$

$$4\left(\frac{12}{5}\right) \stackrel{?}{=} \frac{48}{5} \quad \frac{48}{5} = \frac{48}{5} \checkmark$$

Solve for x

$$7. 4x - 3 = 5$$

$$+3 \quad +3$$

$$4x = 8$$

$$\frac{4x}{4} = \frac{8}{4}$$

$$\boxed{x = 2}$$

Solve for x

8. $4x - 3(2y + 1) = 12$

$$4x = 12 + 3(2y + 1)$$

$$\boxed{x = \frac{12 + 3(2y + 1)}{4}} = \frac{12 + 6y + 3}{4}$$
$$\boxed{= \frac{15 + 6y}{4}}$$

Simplify, and express using positive exponents only

9. $(8mz^3)(-2m^3z^2q) = -16 m^{1+3} z^{3+2} q$

$$= -16 m^4 z^5 q$$

10. $\frac{6x^4y^{-3}}{4x^{-8}y^{-2}} = \frac{3x^{4-(-8)}y^{-3-(-2)}}{2}$

$$= \frac{3x^{12}y^{-1}}{2}$$
$$= \boxed{\frac{3x^{12}}{2y}}$$

Name _____

Show your work on all problems, and leave your solutions in the simplest form possible.

Subtract

$$1. -5 - (-4) = -5 + 4 = -1$$

Divide

$$2. \frac{3}{5} \div (-2) = \frac{3}{5} \div \frac{-2}{1}$$

$$= \frac{3}{5} \times \frac{1}{-2}$$

$$= \boxed{\frac{3}{-10}}$$

Calculate using rules for order of operations

$$3. \left[\frac{3}{2} \div (-11) \right] \times \left(\frac{2}{5} \right) = \left[\frac{3}{2} \times \frac{1}{-11} \right] \left(\frac{2}{5} \right)$$

$$= \left(\frac{3}{-22} \right) \left(\frac{2}{5} \right) = \frac{6}{-110} = \boxed{-\frac{3}{55}}$$

$$4. \frac{7 \times 3 - 5^2}{9 + 4 \times 2} = \frac{7 \times 3 - 25}{9 + 8}$$

$$= \frac{21 - 25}{17}$$

$$= \boxed{\frac{-4}{17}}$$

$$5. \frac{(2-3)^3 - 5|2-4|}{7 - 2 \times 5^2} = \frac{(-1)^3 - 5|-2|}{7 - 2 \times 25}$$

$$= \frac{-1 - 5(2)}{7 - 50}$$

$$= \frac{-1 - 10}{-43} = \frac{-11}{-43} = \boxed{\frac{11}{43}}$$

Solve for y and check your solution

$$6. 8(y+2) = 16y$$

$$8y + 16 = 16y$$

$$-8y \quad -8y$$

$$16 = 8y$$

$$\frac{16}{8} = \frac{8y}{8}$$

$$\boxed{2 = y}$$

Check

$$8(2+2) \stackrel{?}{=} 16(2)$$

$$8(4) \stackrel{?}{=} 32$$

$$32 = 32 \checkmark$$

Solve for x

$$7. 8x - 3 = 5$$

$$+3 \quad +3$$

$$8x = 8$$

$$\frac{8x}{8} = \frac{8}{8}$$

$$\boxed{x = 1}$$

Solve for x

8. $8x - 3(2y + 1) = 5$

$$\frac{8x}{8} = \frac{5 + 3(2y + 1)}{8}$$

$$x = \frac{5 + 3(2y + 1)}{8}$$

$$x = \frac{6y + 8}{8}$$

Simplify, and express using positive exponents only

9. $(9mn^3)(-2m^3nq) = -18 m^{1+3} n^{3+1} q$
 $= -18 m^4 n^4 q$

10. $\frac{6x^4y^3}{4x^{-8}y^{-2}} = \frac{3x^{-4+8}y^{3-(-2)}}{2}$
 $= \frac{3x^4y^5}{2}$