

Chapter 3 – Worksheet 1A**Reduce (just like dividing fractions):**

$$1) \frac{\frac{x}{x}}{\frac{y}{y}} = x \div \frac{x}{y}$$

$$= x \left(\frac{y}{x} \right)$$

$$= y$$

$$2) \frac{\frac{1}{x}}{\frac{1}{y}}$$

$$3) \frac{\frac{1}{y}}{\frac{x}{x}}$$

$$4) \frac{\frac{x}{y}}{\frac{y}{x}}$$

$$5) \frac{\frac{x}{r}}{\frac{y}{y}}$$

Add (get a common denominator).

$$6) \frac{1}{x} + \frac{1}{y}$$

$$7) \frac{r}{x} + \frac{r}{y}$$

Solve for x (get x by itself).

$$8) yx = s$$

$$9) y + x = s$$

$$10) y + 2x = s$$

$$11) 3y + 2x = s$$

$$12) y - x = s$$

$$13) y - 2x = s$$

$$14) 2y + 2x = s$$

$$15) \frac{x}{y} = s$$

$$16) \frac{y}{x} = s$$

$$17) \frac{x}{y} = \frac{1}{s}$$

$$18) \frac{y}{x} = \frac{1}{s}$$

Multiply.

$$19) 2y(1-y) = 2y - 2y^2$$

$$20) m(n+p)$$

$$21) (x-y)(x+y)$$

$$22) (1+a)(1-a)$$

$$23) (x-y)^2$$

$$24) (a+b)^2$$

$$25) (c+1)(c-1)$$

$$26) (x+y)(x-y)$$

$$27) (1+m)^2$$

Factor.

$$28) a^2 - b^2 = (a+b)(a-b)$$

$$29) x^2y^2 + y^4 = y^2(x^2 + y^2)$$

$$30) m^2 + m^2p^2$$

$$31) 1 - c^2$$

$$32) x^2y + y^3$$

$$33) mp^2 - m$$

$$34) x^2 - y^2$$

$$35) m^2 - m^2p^2$$

$$36) a + ab^2$$

$$37) r^2 - s^2$$

$$38) 1 - p^2$$

$$39) x^3 - y^3$$

$$40) a^4 - b^4$$

$$41) m^3 - 1$$

$$42) p^3 + 1$$

Recall:

$$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$

$$a^3 - b^3 = (a-b)(a^2 + ab + b^2)$$