

Quant Tools for Bus & Econ – ECON 220-02 (11273)
Homework 1

Section 0.1

1. $2(4 + (-1))(2 \cdot -4) = 2(3)(-8) = -48$

2. $20/(3 \cdot 4) - 1 = \frac{20}{12} - 1 = .67$

3. $\frac{3 + ([3 + (-5)])}{3 - 2 \times 2} = \frac{3 + (-2)}{3 - 4} = \frac{1}{-1} = -1$

Section 0.3

4. $(2x - 2)(3x - 4) = 6x^2 - 6x - 8x + 8 = 6x^2 - 14x + 8$

5. $\left(x + \frac{1}{x}\right)^2 = \left(x + \frac{1}{x}\right) + \left(x + \frac{1}{x}\right) = x^2 + \frac{x}{x} + \frac{x}{x} + \frac{2}{x} = x^2 + 2 + \frac{2}{x}$

6. $(x + y - xy)^2 = x^2 + y^2 - (xy)^2 + 2xy + 2(x - xy) + 2(y - xy) = x^2 + y^2 - (xy)^2 + 2xy + 2x - 2xy + 2y - 2xy = x^2 + y^2 - (xy)^2 + 2x + 2y - 2xy$

Section 0.4

$$7. \frac{x-4}{x+1} \cdot \frac{2x+1}{x-1} =$$

$$\frac{x-4}{x+1} \cdot \frac{2x+1}{x-1}$$

$$\frac{\cancel{(x+1)}(x-4)}{\cancel{(x+1)}} \cdot \frac{(x+1)(2x+1)}{x-1}$$

$$(x-4) \left(\frac{2x^2 + 3x + x + 1}{x-1} \right)$$

$$8. \frac{2x-3}{x-2} + \frac{x+3}{x+1} =$$

Section 0.5 – Solve for x

$$9. x + 1 = 2x + 2$$

10. $16x^2 = -24x - 9$

11. $x^2 + x + 1 = 0$