BECA / Dr. Huson / Geometry 10th Grade
Unit 11: Algebra II introduction
29 April 2020

Name: Solutions

**11.3 Homework: Simplify radicals**
***Do not use a calculator or convert values to decimals***

**Simplify each expression**

1. (a) $\sqrt{45}$

$= \sqrt{9}\sqrt{5}$

$= 3\sqrt{5}$

(b) $\sqrt{\theta^2} - +2\beta + 7\theta \quad \theta > 0$

$8\theta - 2\beta$

(c) $\sqrt{75} + 2\sqrt{3}$

$= \sqrt{25}\sqrt{3} + 2\sqrt{3}$

$= 5\sqrt{3} + 2\sqrt{3} = 7\sqrt{3}$

(d) $2x\sqrt{7} + \sqrt{7x^2} \qquad x > 0$

$= 2x\sqrt{7} + x\sqrt{7}$

$= 3x\sqrt{7}$

**Solve for the unknown of interest**

2. Solve for $y$

(a) $x\sin\theta + y\cos\theta = 1$

$y = -\frac{\sin\theta}{\cos\theta}x + \frac{1}{\cos\theta}$

(b) $\frac{1}{k}x + \frac{1}{m}y = \frac{1}{n}$

$y = -\frac{m}{k}x + \frac{m}{n}$

3. Solve for $\theta$

(a) $\theta\sin x + \theta\cos x = 1$

$\theta = \frac{1}{\sin x + \cos x}$

(b) $\theta^2 + \alpha^2 = \beta^2$

$\theta = \pm\sqrt{\beta^2 - \alpha^2}$