Lesson 2.7 Check Your Understanding

**Learning Goal # 1**: Determine whether a quadratic equation has real or complex roots

Proof of Understanding:

1. Determine (but do not solve) the nature of the solutions of the equation $y=5x^{2}-5x+1$

**2 real roots**

1. Determine (but do not solve) the nature of the solutions of the equation $y=2x^{2}+4x+2$

**1 real root**

1. Determine (but do not solve) the nature of the solutions of the equation $y=4x^{2}+4x+2$

**2 complex roots**

**Learning Goal # 2:** Solve quadratic equations using the Quadratic Formula

* Solve quadratic equations with real solutions

Proof of Understanding:

1. Solve: $3x^{2}-20x=7$

**x = 7,** $-\frac{1}{3}$

* Solve quadratic equations with complex solutions

Proof of Understanding:

1. Solve: $-x^{2}=-3x+8$

**x =** $\frac{3}{2}\pm \frac{\sqrt{23}}{2}i$

* \*\*(More challenging) Solve quadratic equations which involve simplifying radicals

Proof of Understanding:

1. Solve: $5x^{2}-5x=1$

**x =** $\frac{1}{2}\pm \frac{3\sqrt{5}}{10}$