Algebra 2 w/ Trig

1.8 Quadratic Formula and Discriminant

Warm- Up:





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Example 1: Solve an Equation with Two Real Solutions Example 2: Solve an Equation with One Real Solution

 

Example 3: Solve an Equation with Imaginary Solutions



YOU TRY:





Example 4: Use the Discriminant



YOU TRY:

**Find the discriminant of the quadratic equation and give the number and type of solutions of the equation.**

  

  

Example 5: Solve a Vertical Motion Problem

**A juggler tosses a ball into the air. The ball leaves the juggler’s hand** 4feet **above the ground and has an initial vertical velocity of** 40feet **per second. The juggler catches the ball when it falls back to a height of** 3feet**. How long is the ball in the air?**

HINT: Use *h* = –16*t*2 + *v*0*t* +*h*0**.**

YOU TRY:

**What If? In Example** 5**, suppose the ball leaves the juggler’s hand with an initial vertical velocity of** 50feet per second**. How long is the ball in the air?**

KEEP GOING:

**Use the quadratic formula to solve the equation.**

**1.** 4*x*2 – 4*x* + 1 = 0 **2.** – *x*2 +8*x* = 20 **3.** – *x*2 =6*x* – 2

**5. An object is thrown upward from a height of** 15 **feet at an initial velocity of** 35 **feet per second. How long will it take for the object to hit the ground?**

**4. Find the discriminant of** 2*x*2 + 3*x* – 6 = 0 **and give**

 **the number and type of solutions of the equation.**

Hw: Section 1.8 p. 62 #13-39 odd