Algebra 2 w/ Trig

1.4 Solving $ax^{2}+bx+c=0$

Warm- Up:

 

 



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EXAMPLE 1: Factor a$x^{2}+bx+c$ where c>0 YOU TRY:

**Factor** 5*x*2 – 17*x* + 6. **Factor 1.** 7*x*2 – 20*x* – 3

EXAMPLE 2: Factor a$x^{2}+bx+c$ where c<0

**Factor** 3*x*2 + 20*x* – 7. **Factor 2.** 5*z*2 + 16*z* + 3

 **Factor 3.** 2*w*2 + *w* + 3

EXAMPLE 3: Factoring with Special Patterns

**Factor the expression.**

**a.** 9*x*2 – 64 **b.** 4*y*2 + 20*y* + 25 **c.** 36*w*2 – 12*w* + 1

YOU TRY:

**4.** 16*x*2 – 1 **5.** 9*y*2 + 12*y* + 4 **6.** 4*r*2 – 28*r* + 49

**7.** 25*s*2 – 80*s* + 64 **8.** 49*z*2 + 4*z* + 9 **9.** 36*n*2 – 9

Example 4: Factor Out Monomials First

**Factor the expression.** YOU TRY:

**a.** 5*x*2 – 45 **10.** 3*s*2 – 24

**b.** 6*q*2 – 14*q* + 8 **11.** 8*t*2 + 38*t* – 10

**c.** – 5*z*2 + 20*z* ***12.*** *6x2 + 24x + 15*

**d.** 12*p*2 – 21*p* + 3 **13.** 12*x*2 – 28*x* – 24

 **14.** –16*n*2 + 12*n*

EXAMPLE 5: Solving Quadratic Equations

**Solve the following quadratic equation:**

a. 3*x*2 + 10*x* – 8 = 0 **b.** 5*p*2 – 16*p* + 15 = 4*p* – 5.

YOU TRY:

**Solve the following Quadratic Equations:**

**15.** 6*x*2 – 3*x* – 63 = 0 **16.** 12*x*2 + 7*x* + 2 = *x* +8

EXAMPLE 6: Use a Quadratic Equation as a Model

**You have made a rectangular quilt that is** 5 **feet by** 4 **feet. You want to use the remaining** 10square feet **of fabric to add a decorative border of uniform width to the quilt. What should the width of the quilt’s border be?**

EXAMPLE 7: Solve a Multi-Step Problem

**A monthly teen magazine has** 28,000 **subscribers when it charges** $10 **per annual subscription. For each** $1 **increase in price, the magazine loses about** 2000 **subscribers. How much should the magazine charge to maximize annual revenue? What is the maximum annual revenue?**

KEEP GOING:

Hw: Section 1.3 p. 22 #25-37 odd & Section 1.4 p. 29 #33-39 odd

**Factor the expression.**

**1.** 8*r*2 + 6r – 5

**2.** 3*p*2 – 7*p* + 4

**3.** 5*z*2 – 80

**4.** 9*m*2 + 30*mn* + 25*n*2

**5.** **Solve** 5*x*2 + *x* – 4 = 0**.**

**6.** **A mat of uniform width and area** 115 **square inches**

 **surrounds an** 8-**inch** X 10-**inch** **photograph. What is**

 **the width of the mat?**