

Review For Summative

Instructional Focus 1: I can factor and solve quadratics

Factor the following:

1.  $x^2 + 5x + 6$

$(x+3)(x+2)$

mult: 6, 5  
add: 1, 6  
3, 2 →

3.  $16x^2 - 25$  Difference of Squares

$(4x-5)(4x+5)$

2.  $2ab^2 + 6ab^3 + 8a^2b$

GCF

$2ab(b + 3b^2 + 4a)$

what's left

4.  $(3x^2 + 9x) + (2x + 6)$  Grouping

$3x(x+3) + 2(x+3)$

$(x+3)(3x+2)$

Solve the quadratics using whichever method you prefer: You can always

5.  $x^2 - 81 = 0$

$x^2 = 81$

$x = \pm 9$

7.  $2x^2 + x - 6 = 0$  use quadratic formula!

$2x^2 + 4x - 3x - 6 = 0$

$2x(x+2) - 3(x+2) = 0$

$(x+2)(2x-3) = 0$

$x = -2$   $x = 3/2$

6.  $x^2 - 3x = -16$  Get everything on one side.

$x^2 - 3x + 16 = 0$

$x = \frac{-(-3) \pm \sqrt{9 - 4(1)(16)}}{2(1)} = \frac{3 \pm \sqrt{-55}}{2} = \frac{3 \pm i\sqrt{55}}{2}$

8.  $x^2 + 3x - 14 = 0$

$x = \frac{-3 \pm \sqrt{9 - 4(1)(-14)}}{2}$

$x = \frac{-3 \pm \sqrt{65}}{2}$  OR  $x = 2.53$   
 $x = -5.53$

Instructional Focus #2: I know and can use complex numbers

Simplify and complete the following operations with complex numbers. Write your answers in standard form.

9.  $3\sqrt{-100}$

$3 \cdot 10i = 30i$

10.  $(8 + 3i) - (7 + 6i)$

$8 + 3i - 7 - 6i$

$1 - 3i$

11.  $(4 - 6i)(3 + 2i)$

$12 + 8i - 18i - 12i^2$

$12 - 10i + 12$

$24 - 10i$

12.  $4i^{10}$

$4(-1) = -4$

$i^8 = 1$   
 $i^9 = i$   
 $i^{10} = -1$

