

Warm-up
Factor:
 $x^3 - 1$
 $8x^3 + 27$
 $64x^3 - 125$

See yesterday's slide
for homework answers.

Oct 6-7:25 PM

Warm-up Answers: ~~Keep~~ Change Plus.

$$① x^3 - 1 = (x-1)(x^2 + x + 1)$$

$$a = x$$

$$b = 1$$

$$② 8x^3 + 27 = (2x+3)(4x^2 - 6x + 9)$$

$$a = 2x$$

$$b = 3$$

$$③ 64x^3 - 125 = (4x-5)(16x^2 + 20x + 25)$$

$$a = 4x$$

$$b = 5$$

Oct 21-7:23 AM

Test:

- ☒ + / - X ÷ Complex Numbers
- ☒ Factor a cube $(a-b)(a^2+ab+b^2)$
 $(a+b)(a^2-ab+b^2)$
- ☒ Parabola: Find Vertex, AOS, Max or Min, Inc/Dec, Range
 $f(x) = -x^2 + 2x + 5$ this form
- ☒ Solve a Quadratic: Using Formula, Completing the Square
- ☒ Solve Rational Equations ($x \neq ?$, LCD)
- ☒ Solve a Radical Equation
- ☒ Solve an Absolute Value Inequality

Test Review: Start in class and finish for Homework

PP. 252 - 253 #18, #20, #27 - 29, #37 - 40,

#43 - 45, #53, #54

PP 255: #35

TEST TOMORROW

Oct 19-1:06 PM



Oct 17-12:12 PM

18) $\{27/7\}$

20) $\{0, 3\}$

27. $\{x | x \leq -\frac{5}{3} \text{ or } x \geq 1\}$

28. $\{x | -2/3 < x < 1\}$

29) $\{x | x \leq -6 \text{ or } x \geq 2\}$

37) $-18-26i$

38) $\frac{11}{10} + \frac{3}{10}i$

39) $1-4i$

40) $2-i$

43) $\{6, -3\}$

44) $\{2 \pm \sqrt{6}\}$

45) $\{2/3, -4\}$

53) a) $(3/8, -7/16)$

b) $x = 3/8$

c) max

d) $\{y | y \leq -7/16\}$

54) a) $(1, -2)$

b) $x = 1$

c) min

d) $\{y | y \geq 2\}$

pg 255:

35) 15 ft by 30 ft

$$18. \left(\frac{5}{2x+3} + \frac{1}{x-6} = 0 \right) (2x+3)(x-6) \quad x \neq -\frac{3}{2}, 6$$

$$5(x-6) + 2x+3 = 0$$

$$5x-30+2x+3 = 0$$

$$7x = 27$$

$$x = \frac{27}{7}$$

$\{ \frac{27}{7} \}$

$$20. \sqrt{5x+1} - 1 = \sqrt{3x}$$

$$(\sqrt{5x+1})^2 = (\sqrt{3x}+1)^2$$

$$5x+1 = 3x+2+3x+1$$

$$2x = 2+3x$$

$$x^2 = 3x$$

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

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

$$x=0 \text{ or } x=3$$

$\{0, 3\}$

$$\text{ck } \sqrt{5(0)+1} - 1 = \sqrt{3(0)}$$

$$\sqrt{1} - 1 = \sqrt{0}$$

$$0 \neq 0$$

$$\sqrt{5(3)+1} - 1 = \sqrt{3(3)}$$

$$\sqrt{16} - 1 = \sqrt{9}$$

$$4-1 = 3$$

$$3 \neq 3$$

Oct 18-7:11 AM

Oct 21-6:45 AM

27. $3x+7 \leq 2$ or $2x+3 \geq 5$ $\{x|x \leq -\frac{5}{3} \text{ or } x \geq 1\}$
 $3x \leq -5$ $2x \geq 2$
 $x \leq -\frac{5}{3}$ $x \geq 1$
 $(-\infty, -\frac{5}{3}] \cup [1, \infty)$

28. $|6x-1| < 5$ $\{x|-\frac{2}{3} < x < 1\}$
 $6x-1 < 5$ $-6x+1 < 5$
 $6x < 6$ $-6x < 4$
 $x < 1$ $x > -\frac{2}{3}$
 $(-\frac{2}{3}, 1)$

Oct 21-7:05 AM

29. $|x+4| \geq 2$ $\{x|x \leq -6 \text{ or } x \geq -2\}$
 $x+4 \geq 2$ $-x-4 \geq 2$
 $x \geq -2$ $-x \geq 6$
 $x \leq -6$

37. $(6+2i)(-4-3i) = -24 - 18i - 8i - 6i^2 = -18 - 26i$

38. $\frac{2-3i}{1-3i} \cdot \frac{1+3i}{1+3i} = \frac{2+6i-3i-9i^2}{1-9i^2} = \frac{11+3i}{10} = \frac{11}{10} + \frac{3}{10}i$

39. $(3-5i)-(2-i) = 1-4i$

40. $(6+2i)+(-4-3i) = 2-i$

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43. $x^2 - 3x + \frac{9}{4} = 18\frac{7}{4} + \frac{9}{4}$ $\text{Aside: } (\frac{-3}{2})^2 = \frac{9}{4}$ $\{6, -3\}$
 $(x - \frac{3}{2})^2 = \frac{81}{4}$
 $x - \frac{3}{2} = \pm \sqrt{\frac{81}{4}}$
 $x = \frac{3}{2} \pm \frac{9}{2}$
 $x = \frac{3}{2} + \frac{9}{2} = \frac{12}{2} = 6$
 $x = \frac{3}{2} - \frac{9}{2} = \frac{-6}{2} = -3$

44. $3x^2 - 12x - 6 = 0 \div 3$ $\{2 \pm \sqrt{6}\}$
 $x^2 - 4x + 4 = 2 + 4$
 $(x-2)^2 = 6$
 $x-2 = \pm \sqrt{6}$
 $x = 2 \pm \sqrt{6}$

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45. $3x^2 + 10x = 8$ $p: -24$
 $3x^2 + 10x - 8 = 0$ $\frac{s: 10}{12, -2}$ $\{\frac{2}{3}, -4\}$
 $(3x-2)(x+4) = 0$
 $x = \frac{2}{3}$ $x = -4$

53. $f(x) = -4x^2 + 3x - 1$
 $\text{AOS: } x = \frac{-3}{2(-4)}$
 $x = \frac{3}{8}$
 $f(\frac{3}{8}) = -\frac{7}{16}$

a. $(\frac{3}{8}, -\frac{7}{16})$
b. $x = \frac{3}{8}$
c. maximum
d. $\{y|y \leq -\frac{7}{16}\}$

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54. $f(x) = 5x^2 - 10x + 3$ a. (1, -2)
 $\text{AOS: } x = \frac{-(-10)}{2(5)}$ b. $x = 1$
 $x = 1$ c. minimum
 $f(1) = -2$ d. $\{y|y \geq -2\}$

35. $60 - 2x = 30$ $A = x(60 - 2x)$
 $x = 15$ $A = -2x^2 + 60x$
 $\text{AOS: } x = \frac{-60}{2(-2)}$
 $x = 15$

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Oct 24-12:04 PM