Algebra 2 Ch. 5 Review
Quiz 5.7-5.8
Mon: test Ch. 5

Whiteboards

Given a polynomial and one of its factors, find the remaining factors of the polynomial.

45. $3x^3 + 20x^2 + 23x - 10; (x + 5)$

$x + 5 = 0$

$x = -5$

-5 | 3 20 23 -10

$\downarrow$ -15 -25 10

3 5 -2 0

$3x^2 + 5x - 2$

-6

$-1 + 6$

2 3

$(3x^2 + 6x)(-x - 2)$

$3x$ $3x$ -1 -1

$3x(x + 2) - 1(x + 2)$

$(3x - 1)(x + 2)$

5-7 Roots and Zeros

State the possible number of positive real zeros, negative real zeros, and imaginary zeros of each function.

48. $f(x) = +2x^3 + 11x^2 + 3x + 2$

(+) 3, 1

(−) —

imag 0, 2

5-8 Rational Zero Theorem

Find all of the zeros of each function.

53. $f(x) = x^3 + 4x^2 + 3x - 2$

⊕ 1

⊖ 2, 0

i 0, 2

$\pm \frac{1,2}{1}$ $\pm 1, \pm 2$

$-2 \mid 1 \quad 4 \quad 3 \quad -2$

$\downarrow \quad -2 \quad -4 \quad 2$

$1 \quad 2 \quad -1 \quad 0$

$x = -2$

$x = -1 + \sqrt{2}$

$x = -1 - \sqrt{2}$

$x^2 + 2x - 1 = 0$

$x = \frac{-2 \pm \sqrt{4+4}}{2}$

$= \frac{-2 \pm \sqrt{8}}{2}$

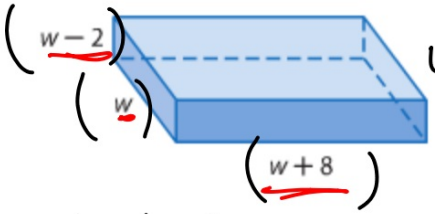
$= \frac{-2}{2} \pm \frac{2\sqrt{2}}{2}$

$-1 \pm \sqrt{2}$

8 → 4 → 2 → 2 → 2

56. STORAGE Melissa is building a storage box that is shaped like a rectangular prism. It will have a volume of 96 cubic feet. Using the diagram below, find the dimensions of the box.

$4 \times 2 \times 12$



$w(w-2)(w+8) = 96$

$w(w^2+6w-16) = 96$

$w^3+6w^2-16w = 96$

$w^3+6w^2-16w-96 = 0$

+ 1

± 1 96
2 48
3 32
4 24
6 16
8 12

4 | 1 6 −16 −96
↓ 4 40 96
1 10 24 0

p. 377 (PT)
odds