W-A2 Algebra 2 Week 30

Name Polynomials

Degrees

$x^0 = 1$ → constant

x^1, 1st degree → linear

x^2, 2nd degree → quadratic

x^3, 3rd degree → cubic

x^4, 4th degree → 4th degree

Number of terms

1 → monomial

2 → binomial

3 → trinomial

4 or more → polynomial

$4x^3 + 7x^2 - 12x + 28$

① ② ③ ④

cubic / degree polynomial / # of terms

$8x^9 - 7$

9th degree / degree binomial / # of terms

$(3x-1)(x^2-5) = 0$

$3x - 1 = 0$

$+1 \quad +1$

$\frac{3x}{3} = \frac{1}{3}$

$x = \frac{1}{3}$

$x^2 - 5 = 0$

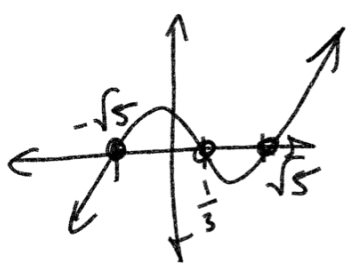
$+5 \quad +5$

$\sqrt{x^2} = \sqrt{5}$

$x = \pm\sqrt{5}$

Find the roots.

$x = \frac{1}{3}, -\sqrt{5}, \sqrt{5}$



Find the roots.

$$x(2x-3)^{2}(x^{2}+4)=0$$

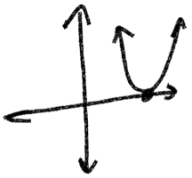
mult of 2

$x=0$

$2x-3=0$
$+3\ \ +3$
$\frac{2x}{2}=\frac{3}{2}$
$x=\frac{3}{2}$ mult of 2

$x^{2}+4=0$
$-4\ \ -4$
$\sqrt{x^{2}}=\sqrt{-4}$
$x=\pm\sqrt{-4}$ → i
$x=\pm i\sqrt{4}$
$x=\pm 2i$

mult 1



mult of 2

$x=0,\ \frac{3}{2}$ mult of 2, $\pm 2i$

Find the lowest degreed polynomial

Zeros: $0, -1, 4$

$x=0$ $\quad x=-1$ $\quad x=4$
$+1\ \ +1$ $\quad -4\ \ -4$
$(x)=0$ $\quad (x+1)=0$ $\quad (x-4)=0$

$x(x+1)(x-4)$

$(x+1)(x-4)$

$x^{2}-4x+x-4$

$x(x^{2}-3x-4)$

$x^{3}-3x^{2}-4x$

Zeros

1, −2, 6

Find the polynomial

$x-1 \quad x=-2 \quad x=6$

$-1 \quad -1 \quad +2 \quad +2 \quad -6 \quad -6$

$x-1=0 \quad x+2=0 \quad x-6=0$

$[(x-1)(x+2)](x-6)$

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

$x^2+2x-x-2$

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

x^3+x^2-2x

$-6x^2-6x+12$

$$x^3-5x^2-8x+12$$

3 mult of 2, −5

$x=3 \quad x=3 \quad x=-5$

$-3 \quad -3 \quad -3 \quad -3 \quad +5 \quad +5$

$(x-3)(x-3)(x+5)$

$\log_a b = x$ $\quad a^x = b$

$\log_{10} 1000 = 3$

$10^3 = 1000$

$\log_2 64 = \underline{6}$

$2^{\boxed{6}} = 64$

$10^{9-6} = 10^3 = \underline{\underline{1000}}$

HW

Supplemental

HW 29

Quiz 29 } May 19th

No HW | Q 30

Test due soon