

① $x^3 - 9x^2 - x + 105$

$-3 \mid \begin{array}{r} 1 \ -9 \ -1 \ 105 \\ -3 \ 36 \ -105 \\ \hline 1 \ -12 \ 35 \\ \ x^2 - 12x + 35 \end{array}$

$(x+3)(x-7)(x-5)$
 $x = -3, 7, 5$

② $x^5 - 4x^4 + x^3 + 10x^2 - 4x - 8$

$2 \mid \begin{array}{r} 1 \ -4 \ 1 \ 10 \ -4 \ -8 \\ 2 \ -4 \ -6 \ 8 \ 8 \\ \hline 1 \ -2 \ -3 \ 4 \ -4 \\ 2 \ 0 \ -3 \ -2 \\ \hline 1 \ 0 \ -3 \ -2 \\ 2 \ 0 \ 4 \ 2 \\ \hline 1 \ 2 \ 1 \\ \ x^2 + 2x + 1 \end{array}$

$(x-2)^3(x+1)^2$
 $x = 2, -1$

HW 20

③ $-8 \mid \begin{array}{r} 1 \ 5 \ -34 \ -56 \ 192 \\ -8 \ 24 \ 80 \ -192 \\ \hline 1 \ -3 \ -10 \ 24 \\ 4 \ 4 \ -24 \\ \hline 1 \ 1 \ -6 \\ \ x^2 + x - 6 \end{array}$

$x(x+8)(x+3)(x-2)(x-4)$
 $x = 0, -8, -3, 2, 4$

④ $(x-5)(x-2)(2x+3)$
 $x = 5, 2, -3/2$

⑤ $(x-4)(x+4)(3x-5)^2$
 $x = 4, -4, 5/3$

⑥ $(4x-3)(x+1-\sqrt{5})(x+1+\sqrt{5})$
 $x = 3/4, -1 \pm \sqrt{5}$

⑦ $(x-2)(x+2)(3x-4)(3x+4)$
 $x = 2, 4/3, -4/3, -2$

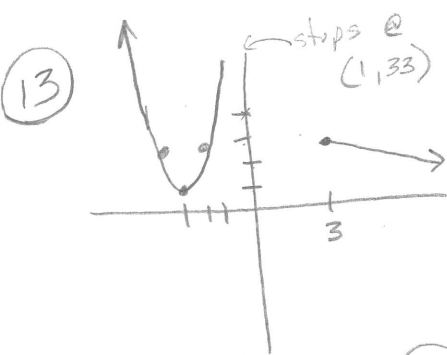
⑧ $(x+2+3i)(x+2-3i)$
 $x = -2 \pm 3i$

⑨ $(x-6)(x-3i)(x+3i)$
 $x = 6, \pm 3i$

⑩ $(x-3)^2(x-5-i)(x-5+i)$
 $x = 5 \pm i, 3$

⑪ $\frac{1}{2}(3x-4)^2(2x-1-3i)(2x-1+3i)$
 $x = 4/3, \frac{1}{2} \pm \frac{3}{2}i$

⑫ $(2x-5)(x+7)(x-6-2i)(x+6+2i)$
 $x = 5/2, -7, 6 \pm 2i$



⑭ $3x^2 - 4x + A = Ax + 4$
 $3(2)^2 - 4(2) + A = 2A + 4$
 $4 + A = 2A + 4$
 $A = 0$

⑮ $2x - A = x^2 - 29$ @ $x = -4$
 $-8 - A = -13$
 $A = 5$
 $x^2 - 29 = Bx^2 + 5x + 1$ @ $x = 3$
 $-20 = 9B + 16$
 $B = -4$

⑯ $y = \frac{64}{375}$
⑰ -0.8826

⑱ MIA

⑲ 5284

⑳ $\lim_{x \rightarrow \infty} f(x) = \infty$
 $\lim_{x \rightarrow -\infty} f(x) = -\infty$

㉑ $\lim_{x \rightarrow \infty} k(x) = \infty$
 $\lim_{x \rightarrow \infty} k(x) = \infty$

㉒ $\lim_{x \rightarrow \infty} m(x) = \infty$
 $\lim_{x \rightarrow \infty} m(x) = -\infty$

㉓ $6A - 4$
㉔ $v'(x) = \pm \sqrt{\frac{x^2}{25} - 7}$

㉕ 3
㉖ $v'(x) = \frac{3x+7}{2x-4}$

㉗ $A'(x) = \frac{6x-8}{2x-1}$

㉘ $m'(x) = 3 \pm \sqrt{x}$

㉙ $y = 0, x = 4, \text{hole @ } x = -4$

㉚ no asyms, hole @ $x = -7$

㉛ $y = 1, \text{no VA, no holes}$

㉜ $x = -7, y = \frac{1}{2}, \text{hole @ } x = -3$

㉝ 37.5% of 10%
12.5% of 80%

㉞ $9\frac{1}{3} \%$