

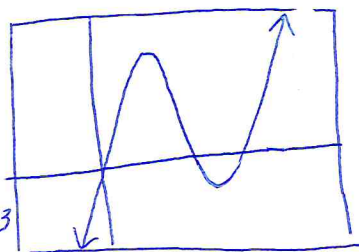
Alg 2
Ch 6

Sec 6.1-6.3 Study Guide

① a) $V = (x)(8-2x)(11-2x)$

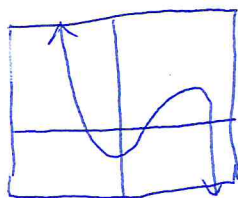
b) The max volume is 60.013 ft³

c) The height of the box (i.e. the size of the square cut-out) that produces the max volume is 1.525 ft



[-3, 10] by [-20, 100]

②



zeros
 $x = .991$

$x = 8.255$

$x = -3.913$

extrema

Relative max of 352.014 at $x = 5.312$

Relative min of -177.923 at $x = -1.757$

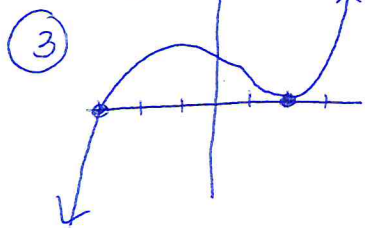
③ P.F. : $(x+2)(3x^2-7x+7) + -8$
F.F. : $3x^2-7x+7 + \frac{-8}{x+2}$

④ a) $x-3$ is a factor ; $R=0$

b) $x+6$ is not a factor ; $R=-72$

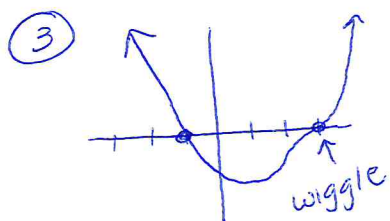
⑤ a) $x=2$ multiplicity 2
① $x=-3$

② EB $y = |x^3| \curvearrowright \uparrow$



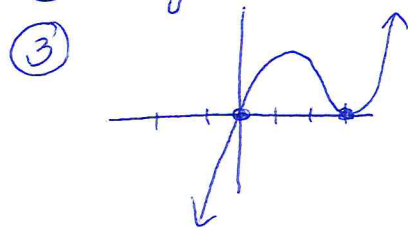
b) $x=-1$
① $x=3$ multiplicity 3

② EB $y = |x^4| \curvearrowright \uparrow$



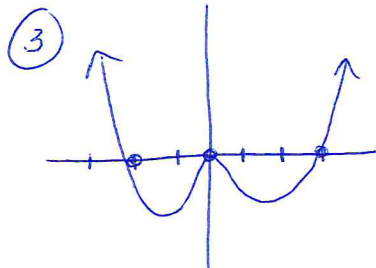
⑥ a) $y = x(x-3)^2$
① $x=0$ $x=3$ multiplicity 2

② EB $y = |x^3| \curvearrowright \uparrow$



⑥ b) $y = x^2(x-3)(x+2)$
① $x=0$ multiplicity 2
 $x=3, x=-2$

② EB $y = |x^4| \curvearrowright \uparrow$



⑦ $f(x) + B$ a is -, even, so $\curvearrowright \downarrow$

$g(x) + C$ a is -, odd, so $\curvearrowright \downarrow$

$h(x) + A$ a is +, even, so $\curvearrowright \uparrow$

$k(x) + D$ a is +, odd, so $\curvearrowright \uparrow$

⑧ Standard Form $f(x) = -x^4 + 3x^3 - 4x$

Classify by degree: quartic

Classify by # of terms: trinomial

EB $\curvearrowright \downarrow$