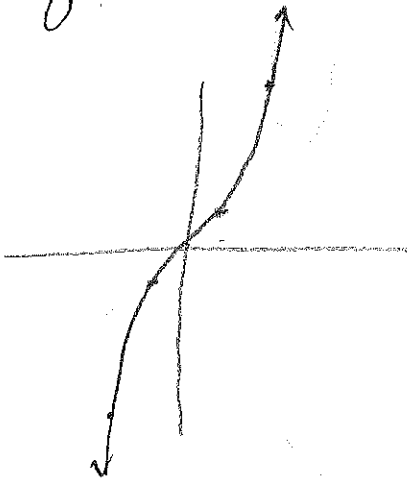
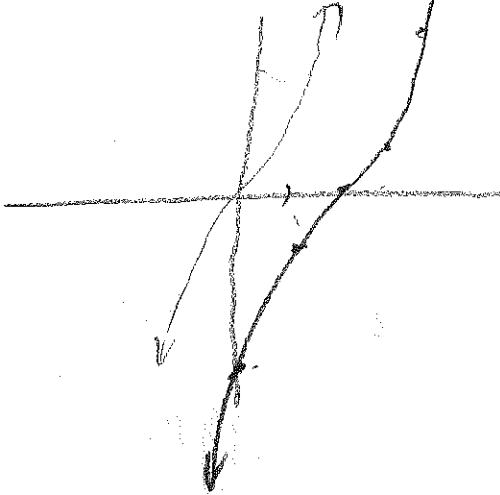


p. 148-150 #9, 11, 43, 44, 47-49, 58, 59, 67, 70, 71

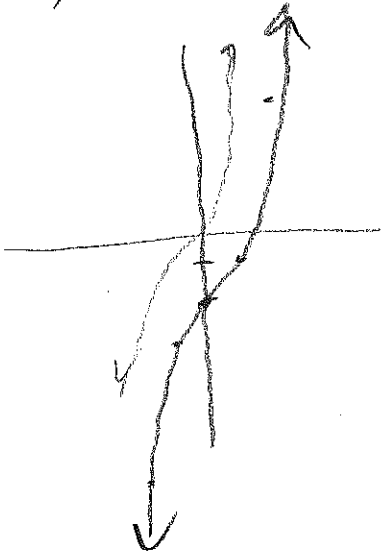
9)  $y = x^3$



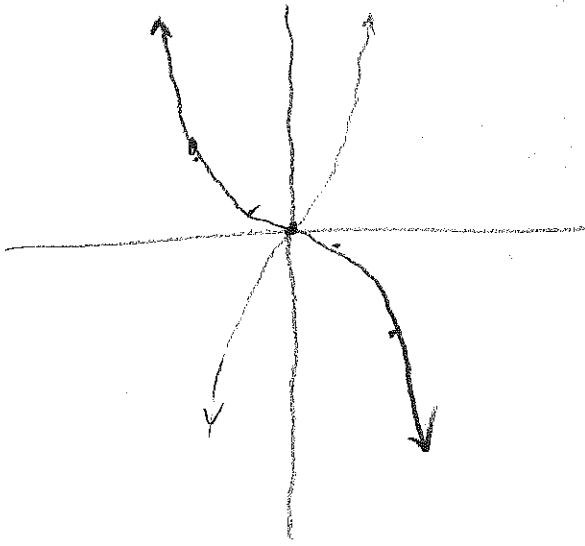
a)  $f(x) = (x-2)^3$



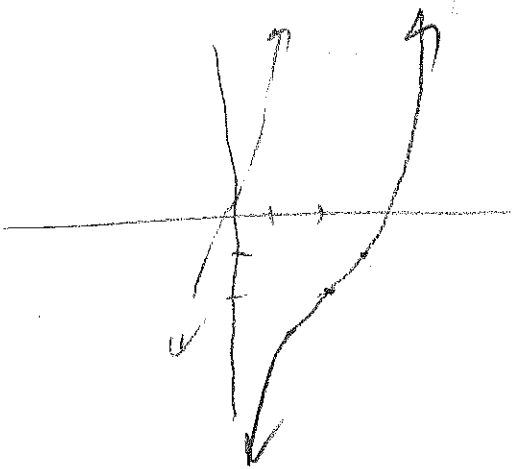
b)  $f(x) = x^3 - 2$



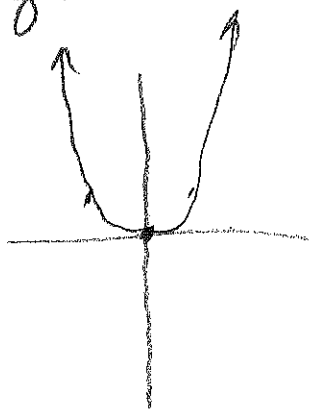
c)  $f(x) = -\frac{1}{2}x^3$



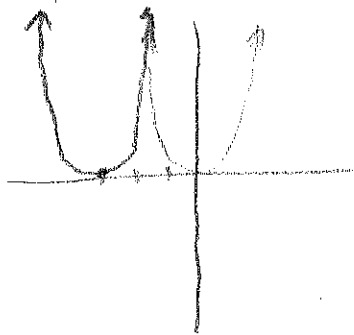
d)  $f(x) = (x-2)^3 - 2$



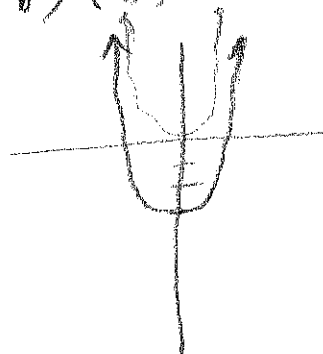
②  $y = x^4$



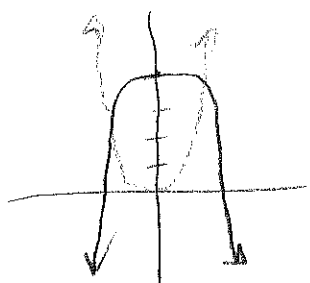
a)  $f(x) = (x+3)^4$



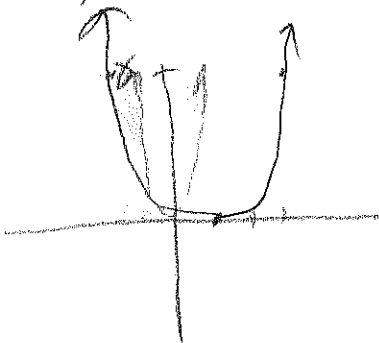
b)  $f(x) = x^4 - 3$



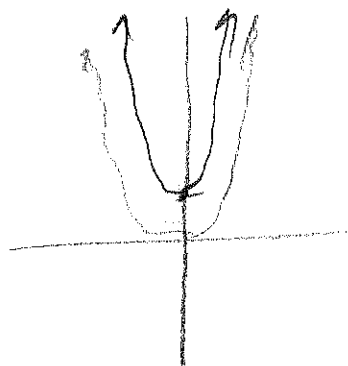
c)  $f(x) = 4 - x^4$



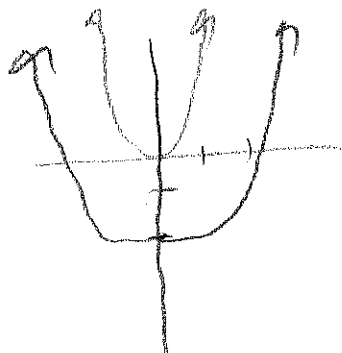
d)  $f(x) = \frac{1}{2}(x-1)^4$



e)  $f(x) = (2x)^4 + 1$



f)  $f(x) = (\frac{1}{2}x)^4 - 2$



43

$$y = 4x^3 - 20x^2 + 25x$$

$$0 = x(4x^2 - 20x + 25) = x(2x-5)(2x-5)$$

$$x = 0, x = 5/2$$

Calc: 0, 2.5

44  $y = 4x^3 + 4x^2 - 8x + 8$   
 $0 = 4(x^3 + x^2 - 2x + 2)$   
 Calc:  $(-2.2695, 0)$

47  $(x)(x-10) = x^2 - 10x$

48  $x(x+3) = x^2 + 3x$

49  $(x-2)(x+6) = x^2 + 4x - 12$

58  $(x+8)(x+4) = x^2 + 12x + 32$

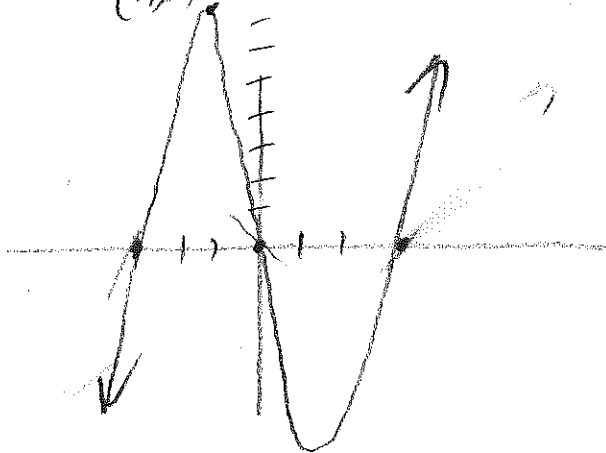
59  $(x+3)(x)(x-1) = (x^2 - x)(x+3)$   
 $= x^3 + 3x^2 - x^2 - 3x = x^3 + 2x^2 - 3x$

67  $f(x) = x^3 - 9x$

a) falling left rising right

b)  $0 = x^3 - 9x = x(x^2 - 9) = x(x+3)(x-3)$

(-1,1)  $x=0, x=-3, x=3$



70  $g(x) = -x^2 + 10x - 16$

a) falling left & right

b)  $0 = -x^2 + 10x - 16$

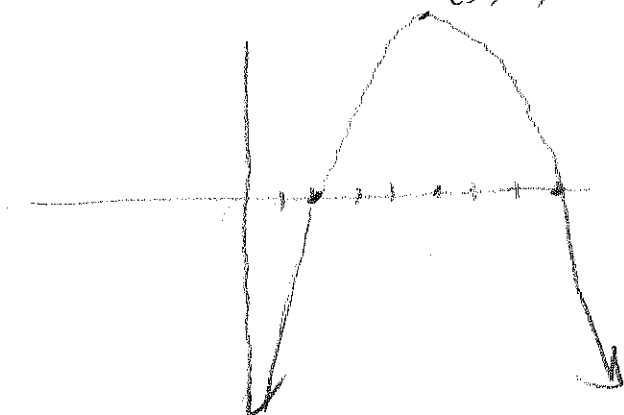
$0 = x^2 - 10x + 16$

$0 = (x - 8)(x - 2)$

$x = 8, x = 2$   
 $(5, 9)$

$\frac{-b}{2a} = \frac{-10}{2(-1)} = 5$

$f(5) = -25 + 50 - 16 = 9$



71  $f(x) = x^3 - 3x^2$

a) falling left, rising right

b)  $0 = x^3 - 3x^2 = x^2(x - 3)$

$x = 0, x = 3$

