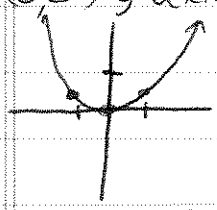
Ch 2
pr 2.2

1. $f(x)=\frac{1}{3}x^4$

K: QI, $(1,\frac{1}{3})$ vert shrink

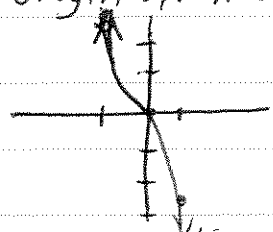
a: (0,0) y-axis sym. $(-1,\frac{1}{3})$ QII



2. $f(x)=-2.5x^5$

K: QIV, $(1,-2.5)$ vert stretch

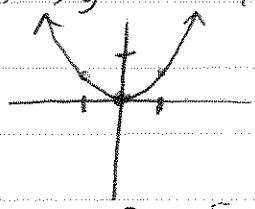
a: (0,0) origin symmetry QII $(-1,2.5)$



3. $f(x)=\frac{1}{2}x^8$

K: QI, $(1,\frac{1}{2})$ vert shrink

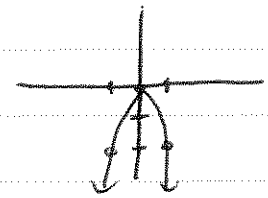
a: (0,0) y-axis sym $(-1,\frac{1}{2})$ QII



4. $f(x)=-2x^4$

K: QIV, (1,-2) vert. stretch

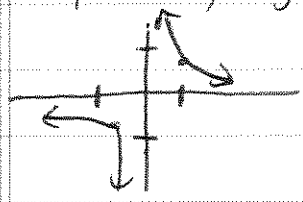
a: (0,0), y-axis symmetry QIII $(-1,-2)$



5. $f(x)=\frac{2}{3}x^{-5}$

K: QI, $(1,\frac{2}{3})$ vert shrink

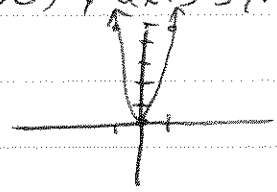
a: asymtotic, origin sym. QIII $(-1,-\frac{2}{3})$



6. $f(x)=5x^6$

K: QI (1,5) vert stretch

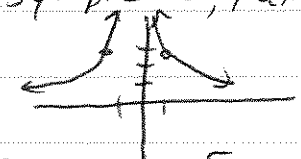
a: (0,0) y-axis sym QII (-1,5)



7. $f(x)=3x^{-6}$

K: QI (1,3) vert stretch

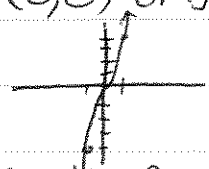
a: asymptotic, y-axis sym QII $(-1,3)$



8. $f(x)=4x^7$

K: QI, (1,4) vert stretch

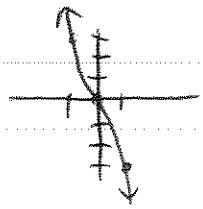
a: (0,0) origin sym, QIII (-1,-4)



9. $f(x)=-3x^5$

K: QIV, (1,-3) vert stretch

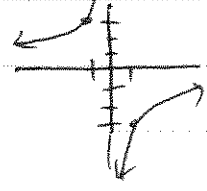
a: (0,0) origin symmetry QII $(-1,3)$



10. $f(x)=-3x^{-5}$

K: QIV, (1,-3) Vert stretch

a: asymptotic origin sym QII $(-1,3)$



* You can replace y-axis sym with even fcn
+ origin symmetry with odd fcn

Fig 1 Pre-Calc
Ch 2
Sec 2.2 p. 182 18-30 even, 31-36

18. $V = kr^2$ 20. $V = kT$ 22. $\rho = \sqrt{2gd}$

24. The Circumference C is proportional/varies directly with the diameter d (with variation constant π)

26. The distance d travelled by a falling object varies directly with the square of the speed v. (with the variation constant $\frac{1}{2g}$)

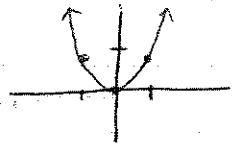
28. D+R $(-\infty, \infty)$
Continuous
$\uparrow - \downarrow (-\infty, \infty)$
Odd
Unbounded
No Asymptotes
$\lim_{x \to \infty} f(x) = -\infty$, $\lim_{x \to -\infty} f(x) = \infty$

30. D+R $(-\infty, 0) \cup (0, \infty)$
Pt of Discont. at $x = 0$
$\uparrow (-\infty, 0) \downarrow (0, \infty)$
Odd
Unbounded
VA $x = 0$ HA $y = 0$
$\lim_{x \to \infty} f(x) = 0$ & $\lim_{x \to -\infty} f(x) = 0$

31. $f(x) = \frac{2}{3}x^4$

K: QI, $(1, \frac{2}{3})$ vert shrink

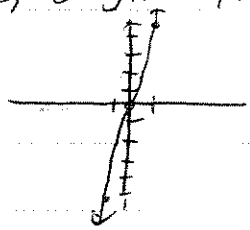
a: (0,0), y-axis sym. QII $(-1, \frac{2}{3})$



32. $f(x) = 5x^3$

K: QI, (1,5) vert stretch

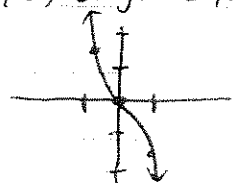
a: (0,0) origin sym. QIII (-1, -5)



33. $f(x) = -1.5x^5$

K: QIV (1, -1.5) vert stretch

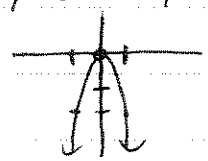
a: (0,0) origin sym. QII (-1, 1.5)



34. $f(x) = -2x^6$

K: QIV (1, -2) vert stretch

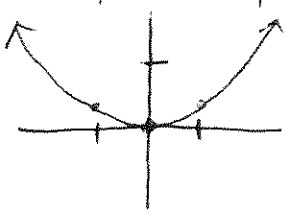
a: (0,0) y-axis symmetry QIII (-1, -2)



35. $f(x) = \frac{1}{4}x^8$

K: QI, $(1, \frac{1}{4})$ vert shrink

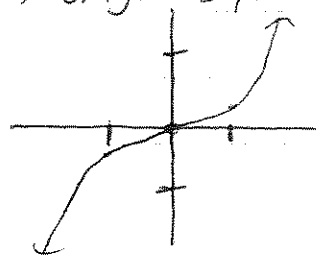
a: (0,0) y-axis sym QII $(-1, \frac{1}{4})$



36. $f(x) = \frac{1}{8}x^7$

K: QI, $(1, \frac{1}{8})$ vert shrink

a: (0,0) origin symmetry QIII $(-1, -\frac{1}{8})$



Trig/Pre-Calc
Ch 2
Sec 2.2 p 182 37-48

37. g 38. a 39. d 40. g 41. h 42. d

43. $f(x) = 3x^{1/4}$

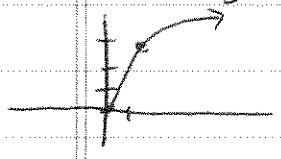
k+ QI (1,3) vert stretch

a+ (0,0)

n: odd power

c: even root - no reflection

$\frac{n}{c} < 1$ slow growth



44. $f(x) = -4x^{2/3}$

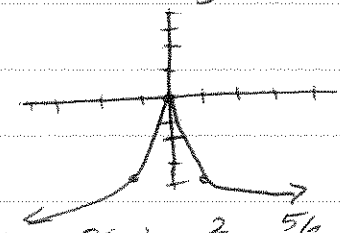
k- QIV (1,-4) vert stretch

a+ (0,0)

n: even power y-axis sym QIII (-1,-4)

c: odd root: reflection

$\frac{n}{c} < 1$ slow growth



45. $f(x) = -2x^{4/3}$

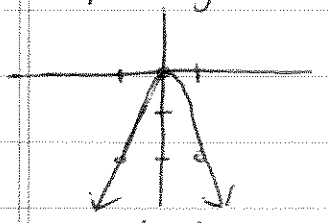
k- QIV (1,-2) vert stretch

a+ (0,0)

n: even power y-axis sym III (-1,-2)

c: odd root: reflection

$\frac{n}{c} > 1$ rapid growth



46. $f(x) = \frac{2}{5}x^{5/2}$

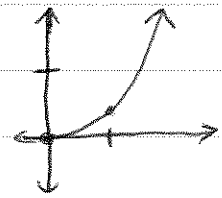
k+ QI, (1, 2/5) vert shrink

a+ (0,0)

n: odd power

c: even root: no reflection

$\frac{n}{c} > 1$ rapid growth

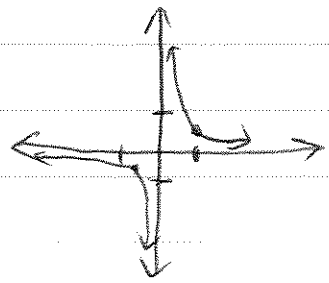


47. $f(x) = \frac{1}{2}x^{-3}$

k+ QI, $(1, \frac{1}{2})$ vert shrink

a- asymptotic, origin symmetry

QIII $(-1, -\frac{1}{2})$



48. $f(x) = -x^{-4}$

k- QIV (1,-1) no stretch/shrink

a- asymptotic, y-axis sym.

QIII (-1,-1)