

Math 121 HW #3

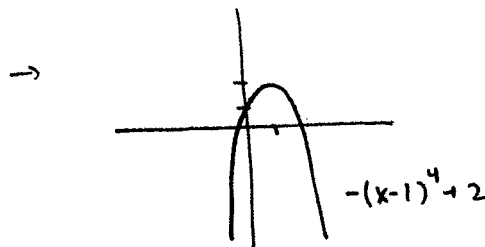
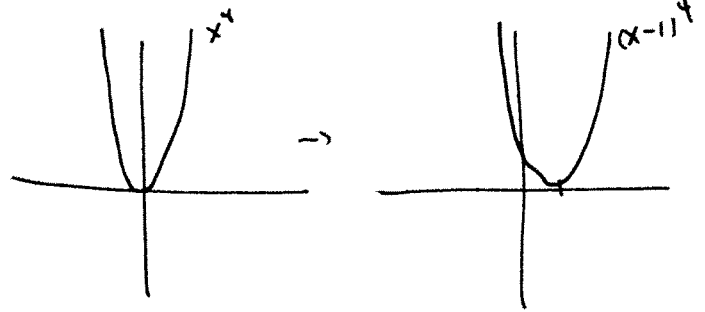
2.3 6, 22

2.4 ~~19~~, ~~33c~~, 36b

2.3 #6

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

Start with  $x^4$ , then shift right 1,  
vertical flip,  
shift up 2.



2.3 #22 4 turning pts, ends go opposite ways

So its degree at least 5, and odd.

2.4 #19

$$16^{x+3} = 64^{2x-5}$$

$$(4^2)^{x+3} = (4^3)^{2x-5}$$

$$4^{2x+6} = 4^{6x-15}$$

$$2x+6 = 6x-15$$

$$21 = 4x$$

$$x = \frac{21}{4}$$

2.4 # 33c

$$A = P \left(1 + \frac{r}{m}\right)^{mt}$$

$$P = 10000$$

$$r = .04$$

$$m = 4$$

$$t = 5$$

$$A = 10000 \left(1 + \frac{.04}{4}\right)^{4 \cdot 5}$$

$$= \$12201.90$$

this is the total final amount.

The amount of interest is  $12,201.90 - 10,000$   
 $= \$2201.90$

2.4 # 36b

$$A = 7500$$

$$P = 5000$$

$$m = 4$$

$$t = 5$$

$$7500 = 5000 \left(1 + \frac{r}{4}\right)^{4 \cdot 5}$$

$$1.5 = \left(1 + \frac{r}{4}\right)^{20}$$

$$1.5^{\frac{1}{20}} = \left(1 + \frac{r}{4}\right)^{20 \cdot \frac{1}{20}}$$

~~1.02048 = 1 + \frac{r}{4}~~

$$1.02048 = 1 + \frac{r}{4}$$

$$\frac{r}{4} = .02048$$

$$r = .08192 \text{ or } 8.192\%$$