

BE - Alg 2 | WEDNESDAY | 3-30-11

① Find value of $50,000$ invested at 4% if compounded MONTHLY

* Homework Review $\Rightarrow$ Pg 849 ^{For} 8 years.

Lesson #10-1

Problems #3-8,
13, 14, 16
21, 24

$\Rightarrow$ Pg 851

Lesson #10-6

Problems 1 $\rightarrow$ 3

* Practice Problems - Exponential Functions

* Need SCIENTIFIC CALCULATOR.

Recommended TI-30 X 5 MULTIVIEW

$$\textcircled{1} A = P \left(1 + \frac{r}{12}\right)^{12t}$$

t = years

P = principal

12 = compounding periods
per year

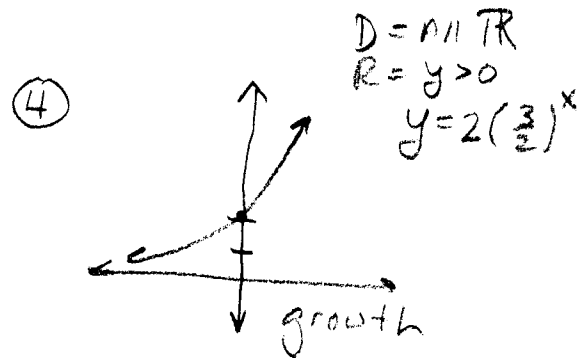
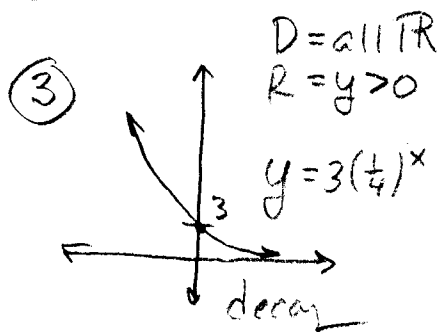
r = ANNUAL INTEREST
RATE AS DECIMAL

$$A = 50000 \left(1 + \frac{.04}{12}\right)^{12(8)}$$

$$A = 50000 (1.00333)^{96}$$

$$A = 50000 (1.376395)$$

$$\boxed{A = \$68,819.76}$$



⑤ $y = 4(3)^x$ growth

⑥ $y = \frac{1}{10^x}$

x	y
-2	100
-1	10
0	1
1	1/10

decay

⑦ $y = 5(\frac{1}{2})^x$ decay

⑧ $y = 2(\frac{5}{4})^x$ growth

⑬ $4^{\sqrt{2}} \cdot 4^{\sqrt{8}} = 4^{1\sqrt{2} + 2\sqrt{2}} = \boxed{4^{3\sqrt{2}}}$

⑭ $(5^{\sqrt{5}})^{\sqrt{45}} = (5^{\sqrt{5}})^{(3\sqrt{5})} = \boxed{5^{15}}$

⑯ $\frac{27^{\sqrt{5}}}{3^{\sqrt{5}}} = \frac{3^{3\sqrt{5}}}{3^{\sqrt{5}}} = 3^{3\sqrt{5} - 1\sqrt{5}} = \boxed{3^{2\sqrt{5}}}$

⑳ $27^{2x-1} = 3$
 $3^{3(2x-1)} = 3^1$

$6x - 3 = 1$

$6x = 4$

$x = \frac{4}{6} = \frac{2}{3}$

㉔ $6^{x+1} = 36^{x-1}$
 $6^{x+1} = 6^{2(x-1)}$

$x+1 = 2x-2$

$3 = x$

① Purchase combine for \$175,000.

{Pg 851
Lesson 10-16
#1-3

Depreciate ($\downarrow$) at 18% per year.

Value in 3 years?

$$V = V_0 (1 - r)^t$$

$$t = \text{years} = 3$$

$$r = .18$$

$$V_0 = 175000$$

$$V = 175000(1 - .18)^3$$

$$V = 175000(.82)^3 = 175000(.5514)$$

$$V = \$96,499.40$$

② Purchased house $\Rightarrow$ \$65000 in 1992.

(1) Appreciates 4.5% per year. Worth in 2003

$$\Rightarrow t = 11 \text{ years. } r = .045$$

$$H = H_0 (1 + r)^t$$

$$H = 65000(1.045)^{11}$$

$$H = 65000(1.62285)$$

$$H = \$105,485.45$$

③ Population $\Rightarrow$ 50,000 in 1950
Increased 2.25% per year.

Population in 2005

$$P = P_0 (1+r)^t$$

$$t = 55$$

$$P_0 = 50000$$

$$r = .0225$$

$$P = 50000 (1.0225)^{55}$$

$$P = 50000 (3.4000)$$

$$P = 170,000 \text{ people}$$

Practice - Q4 Week 3

Solve each equation.

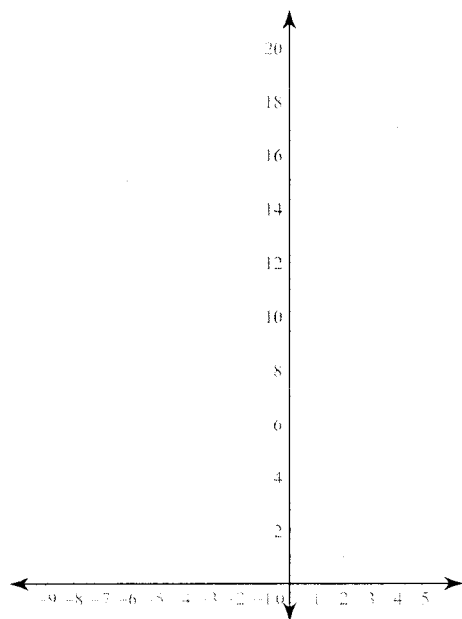
1) $4^{2n-3} = 4^{3n-2}$

2) $\left(\frac{1}{6}\right)^{2m} = 36$

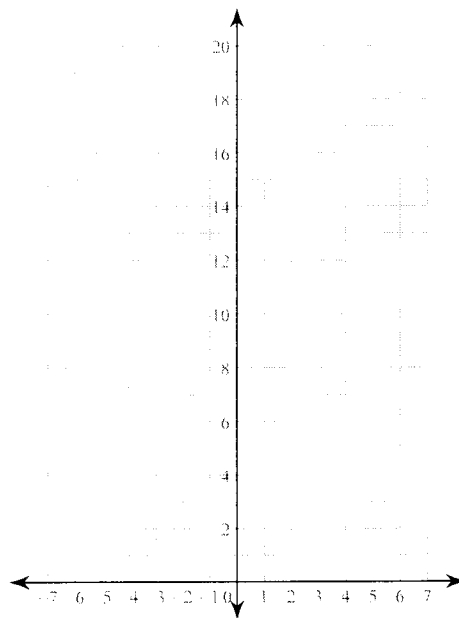
3) $81^{2-2p} \cdot 81^{3p} = \frac{1}{9}$

Sketch the graph of each function.

4) $y = 4 \cdot \left(\frac{1}{2}\right)^{x+2}$



5) $y = 2^x + 1$



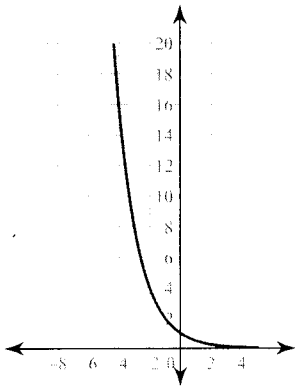
Answers to Practice - Q4 Week 3 (ID: 1)

1) $\{-1\}$

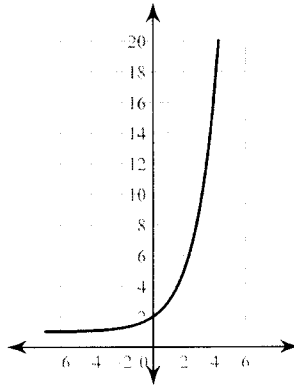
2) $\{-1\}$

3) $\left\{-\frac{5}{2}\right\}$

4)



5)



• Exponential Growth & Decay Problems
(see Ch. 10-6 and end of chapter 10
Study Guide)