BE - Alg 2 | WEDNESDAY

4-11-12

① Find value of $50,000 invested at 4% if compounded monthly for 8 years.

* Homework Review ⇒ Pg 849 Lesson # 10-1 Problems # 3-8, 13, 14, 16, 21, 24

⇒ Pg 851 Lesson # 10-6 Problems 1 → 3

* Practice Problems – Exponential Functions

* NEED SCIENTIFIC CALCULATOR

Recommend TI-30XS MULTIVIEW

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

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

$A = 50000\left(1.00333\overline{3}\right)^{96}$

$A = 50000(1.376395)$

$A = \$68,819.76$

t = years

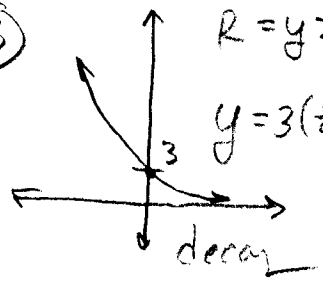
P = principal

12 = compounding periods per year

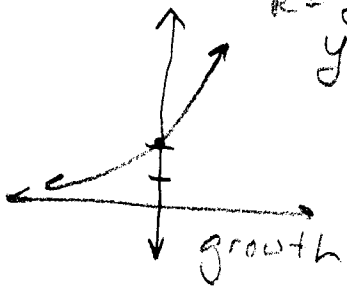
r = annual interest rate as decimal

Pg 849 Lesson 10-1 # 3-8, 13, 14, 16, 21, 24

③ D = all TR
R = y > 0
$y = 3(\frac{1}{4})^x$



④ D = all TR
R = y > 0
$y = 2(\frac{3}{2})^x$



⑤ $y = 4(3)^x$ growth

⑥ $y = \frac{1}{10^x}$

x	y
-2	100
-1	10
0	1
1	$\frac{1}{10}$

decay

⑦ $y = 5(\frac{1}{2})^x$ decay

⑧ $y = 2(\frac{5}{4})^x$ growth

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

㉑ $27^{2x-1} = 3$

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

$6x - 3 = 1$

$6x = 4$

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

㉔ $6^{x+1} = 36^{x-1}$

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

$x + 1 = 2x - 2$

$\boxed{3 = x}$

Pg 851
Lesson 10-6
1-3

① Purchase combine for $175,000.
Depreciate (↓) at 18% per year.
Value in 3 years?

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

t = years = 3
$r = .18$
$V_0 = 175000$

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

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

$\boxed{V = \$96,499.40}$

② Purchased house ⇒ $65000 in 1992.
(↑) Appreciates 4.5% per year. Worth in 2003

⇒ $t = 11$ years. $r = .045$

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

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

$H = 65000(1.62285)$

$\boxed{H = \$105,485.45}$

(3.) Population $\Rightarrow$ 50,000 in 1950

Increased 2.25% per year.

Population in 2005

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

$t = 55$

$P_0 = 50000$

$r = .0225$

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

$$P = 50000(3.4000)$$

$$\boxed{P = 170{,}001 \text{ people}}$$

Algebra 2 - Mr. C.

Name_____

Practice - Q4 Week 3

Date_____ Period____

Solve each equation.

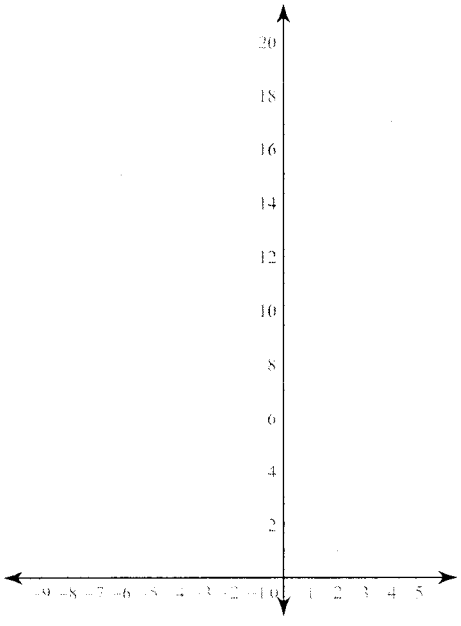
1) $4^{2n-3} = 4^{3n-2}$

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

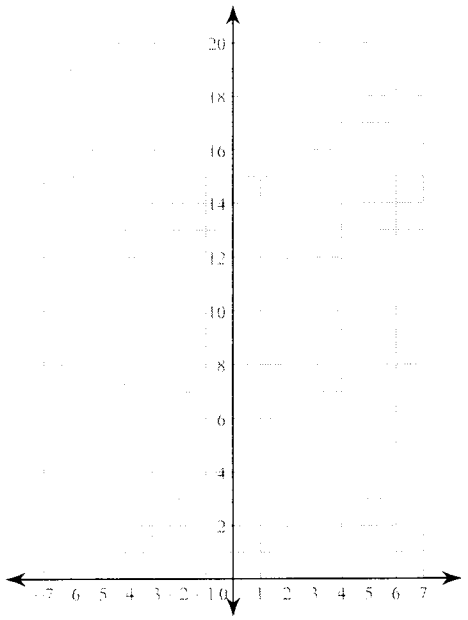
3) $81^{2-2p} \cdot 81^{3p} = \frac{1}{9}$

Sketch the graph of each function.

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



5) $y = 2^x + 1$



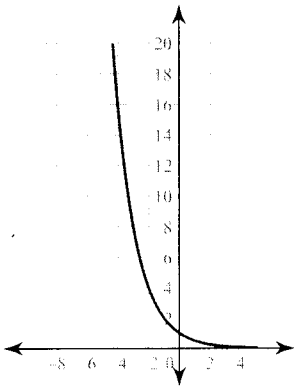
Answers to Practice - Q4 Week 3 (ID: 1)

1) $\{-1\}$

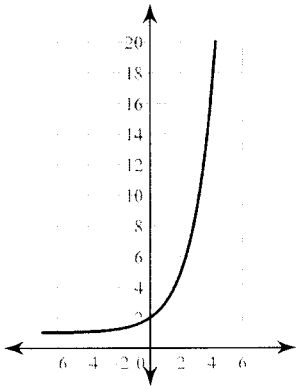
2) $\{-1\}$

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

4)



5)



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