

Book 7.2 # 10, 12, 16, 17, 21, 22, 29, 31, 33, 36, 40, 41

⑩ $y = -9(3)^x$ see attached

⑫ $y = 24(\frac{1}{2})^x$ see attached

⑬ $y = 2^x + 5$ see attached

⑰ $y = 5(\frac{1}{3})^x - 8$ see attached

⑳ $y = -2(3)^{x+1} - 5$ see attached

(cont) ㉓ cook till center 180°
cool to 120°

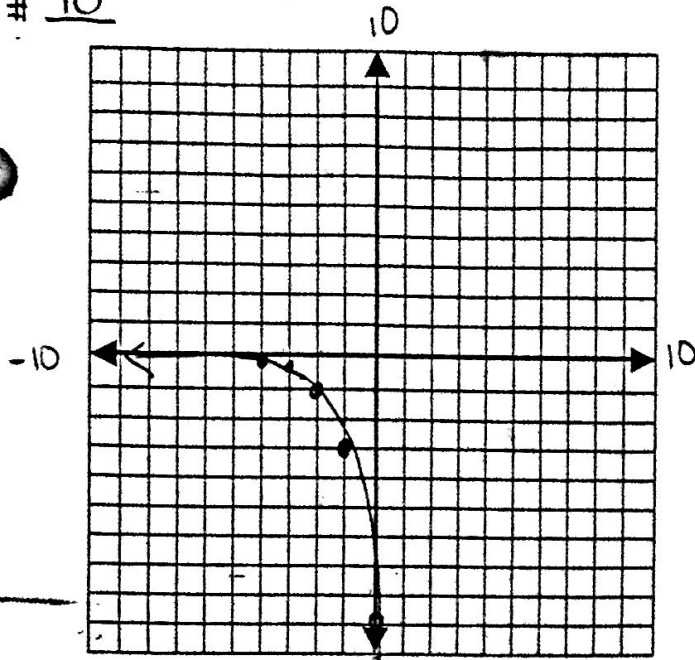
a) room temp 70

time x (min)	y temp F	-70
0	180	110
5	126	56
10	94	24
15	80	10
20	73	3

a) $y = 127.27(0.84)^x + 70$

b) how long to cool - about 5.5 min

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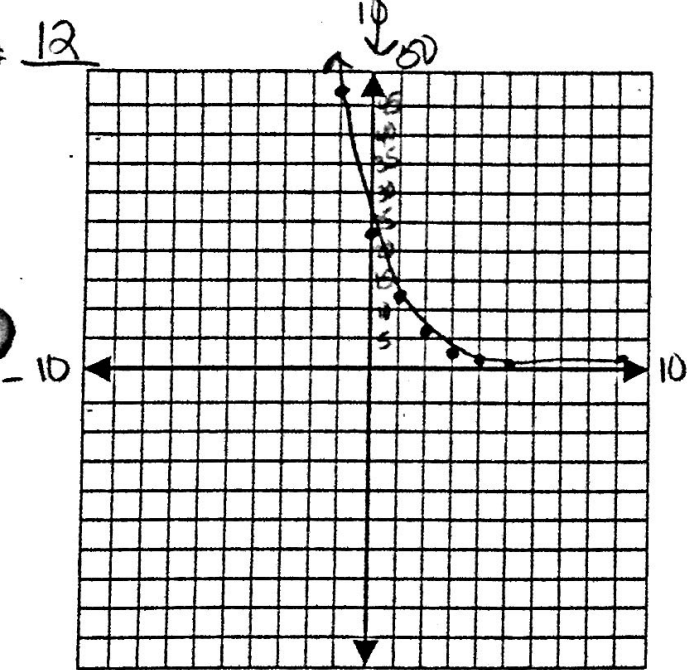


$$y = -9(3)^x$$

x	y
-4	-1
-3	-3
-2	-9
-1	-27
0	-81

growth
 D: $\mathbb{R} (-\infty, \infty)$
 R: $y < 0 (-\infty, 0)$
 y-int: $(0, -9)$
 asym: $y = 0$
 ref: over the x-axis
 str/comp: stretch by factor 9
 transl: X

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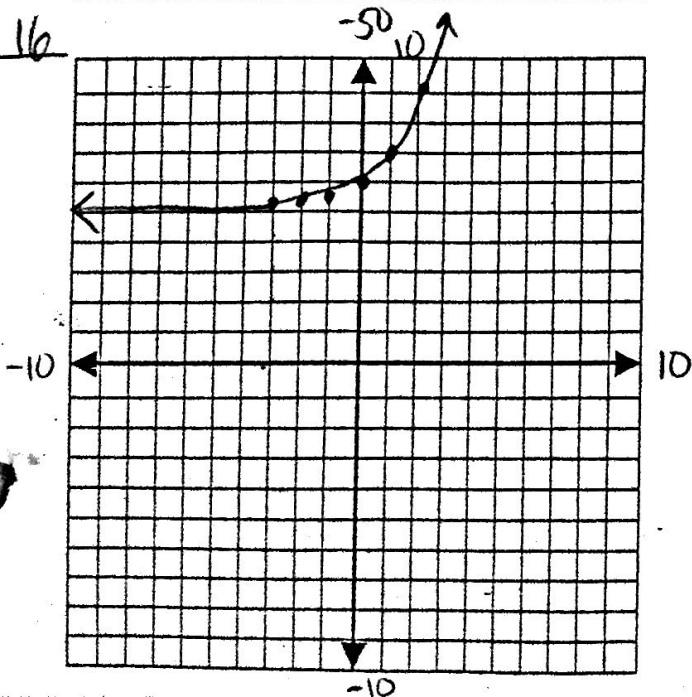


$$y = 24\left(\frac{1}{2}\right)^x$$

x	y
-1	48
0	24
1	12
2	6
3	3
4	1.5
5	0.75

decay
 D: $\mathbb{R} (-\infty, \infty)$
 R: $y > 0 (0, \infty)$
 y-int: $(0, 24)$
 asym: $y = 0$
 ref: X
 str/comp: stretch by factor 24
 transl: X

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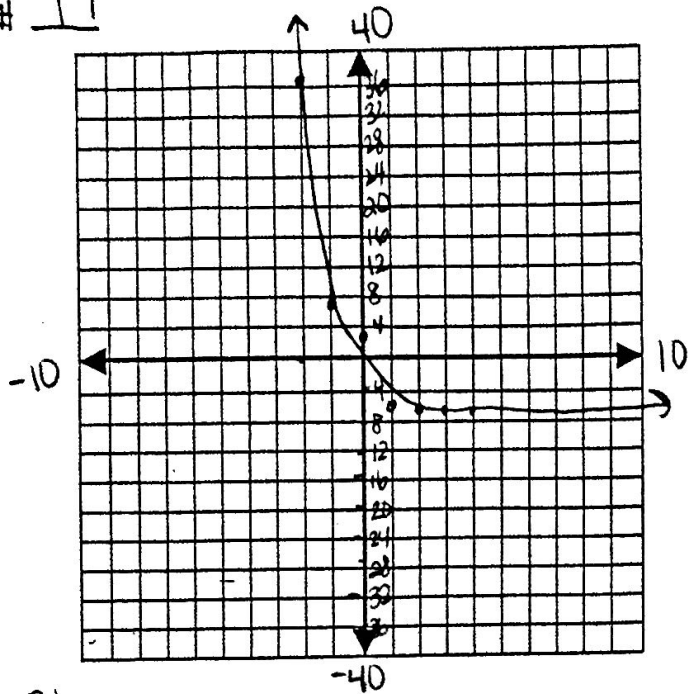


$$y = 2^x + 5$$

x	y
-3	5.125
-2	5.25
-1	5.5
0	6
1	7
2	9

growth
 D: $\mathbb{R} (-\infty, \infty)$
 R: $y > 5 (5, \infty)$
 y-int: $(0, 6)$
 asym: $y = 5$
 ref: X
 str/comp: X
 transl: moves up 5 units

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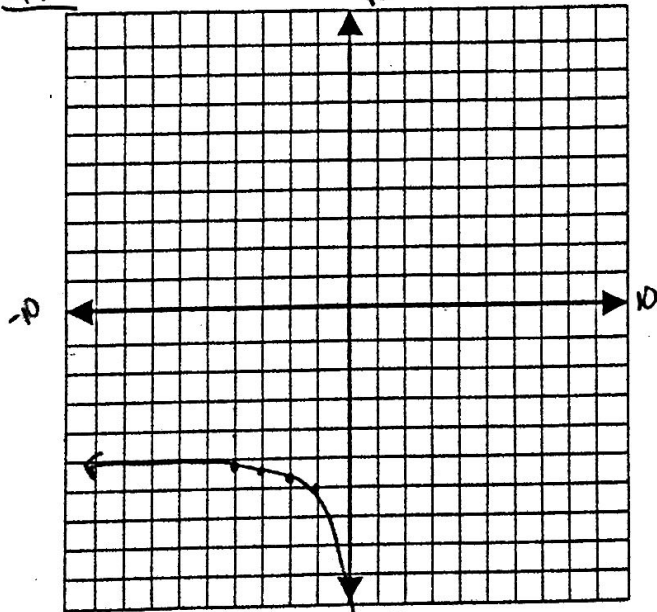


$$y = 5\left(\frac{1}{3}\right)^x - 8$$

x	y
-2	37
-1	7
0	-3
1	-6.3
2	-7.4
3	-7.8
4	-7.9

D: \mathbb{R} $(-\infty, \infty)$
 R: $y > -8$
 y-int: $(0, -3)$
 Asym: $y = -8$
 reflect: x
 stret/comp: stretch fact 5
 trans: moves down 8 units

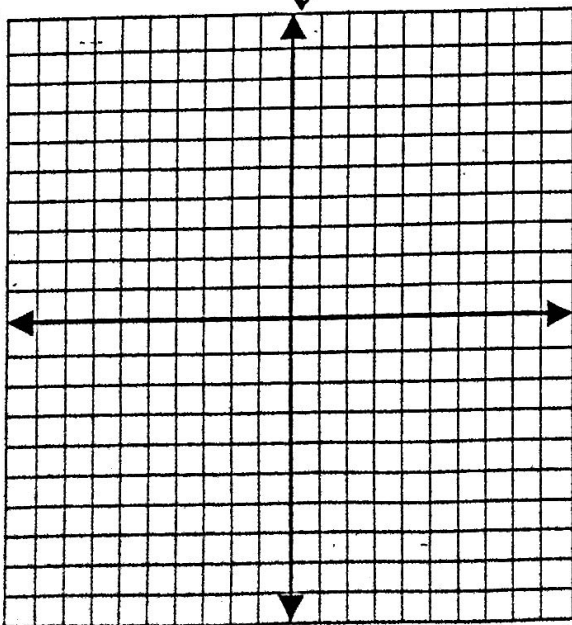
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$$y = -2(3)^{x+1} - 5$$

x	y
-4	-5.07
-3	-5.22
-2	-5.6
-1	-7
0	-11

D: \mathbb{R} $(-\infty, \infty)$
 R: $y < -5$
 y-int: $(0, -11)$
 Asym: $y = -5$
 reflect: over x-axis
 stret/comp: stretch fact 2
 trans: left 1 unit
 down 5 units



$$(29) A = Pe^{rt}$$

$$P = 400$$

$$r = 7.6\%$$

$$t = 1.5 \text{ yr}$$

$$A = 400e^{(.076)(1.5)}$$

$$A = \$448.30$$

$$(31) A = 8000$$

$$P = ?$$

$$r = 5.2\%$$

$$t = 5 \text{ yrs}$$

$$A = Pe^{rt}$$

$$\frac{8000}{e^{.052(5)}} = \frac{Pe^{.052(5)}}{e^{.052(5)}}$$

$$P = 6168.41$$

(32) double principal

$$r = .065$$

compound cont.

$$\frac{2P}{P} = \frac{Pe^{.065t}}{P}$$

$$2 = e^{.065t}$$

between 10-11 years

$$(36) a = 50$$

$$b = .5$$

14.3 days

$$t = 84$$

$$A(t) = 50\left(\frac{1}{2}\right)^{\frac{t}{14.3}}$$

$$A(t) = 50\left(\frac{1}{2}\right)^{\frac{1}{14.3}(84)}$$

85mg

Bank 1

Bank 2

(40) $P =$

$r = 3\%$ yr 1
 2% next 2 yr

$r = 2.49\%$ 3 yrs

a)

$$A(t) = \underbrace{Pe^{.03(1)}}_{1 \text{ yr}} + \underbrace{(Pe^{.03(1)})e^{.02(2)}}_{\text{next 2 yrs}}$$

b) $A(t) = Pe^{.0249(3)}$

c) $Pe^{.03(1)} + (Pe^{.03(1)})e^{.02(2)} + Pe^{.0249(3)}$

(41) $p = 101.3e^{-.001h}$

$h = \text{alt in meters}$

$h = 500\text{m}$

$$P = 101.3e^{-.001(500)}$$

$$P = 61.44 \text{ pascals}$$