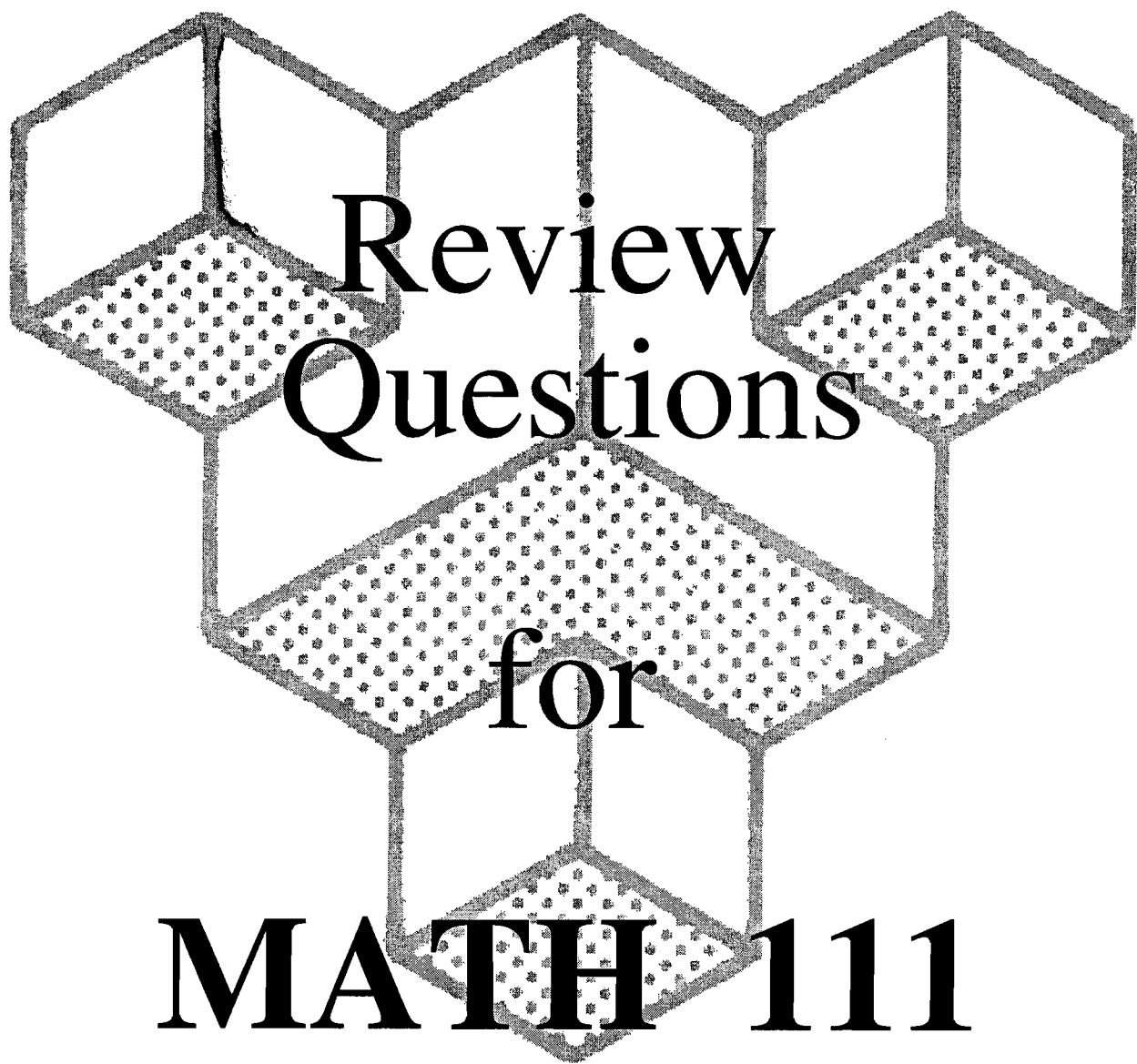




Review
Questions
for
MATH 111

Review Questions for Math 111, Part 1

Factor out a common factor.

1) $t(6 - m) + s(6 - m)$

A) No common factor

C) $(t - s)(6 - m)$

B) $(t + s)(6 - m)$

D) $t(6 - m) + s$

1) ____

Factor completely.

2) $20(p + 4)^2 + 39(p + 4) + 18$

A) $(5p + 10)(4p + 7)$

C) $(5p + 6)(4p + 3)$

B) $(5p + 26)(4p + 19)$

D) $(5p + 23)(4p + 22)$

2) ____

3) $(r + 4t)x^2 + 7(r + 4t)x + 10(r + 4t)$

A) $(r + 4t)(x - 2)(x - 5)$

C) $(r + 4t)(x + 2)(x + 5)$

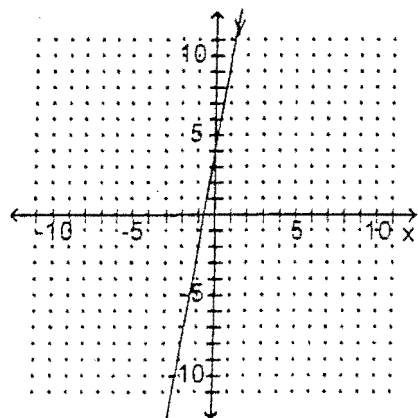
B) $(y - 2)(y - 5)$

D) $(y + 2)(y - 5)$

3) ____

Determine whether or not the graph is a graph of a function.

4)

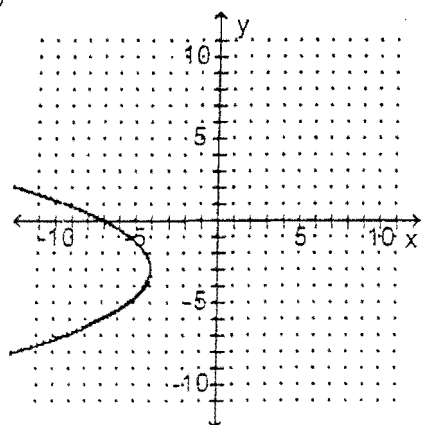


A) Not a function

B) Function

4) ____

5)



A) Not a function

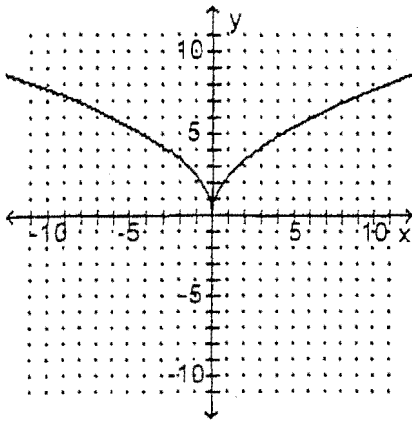
B) Function

5) ____

Review Questions for Math 111, Part 1

Determine whether or not the graph is a graph of a function.

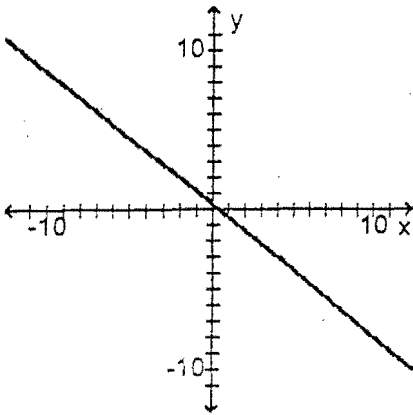
6) 6) ____



- A) Function B) Not a function

Find the domain and the range for the function.

7) 7) ____

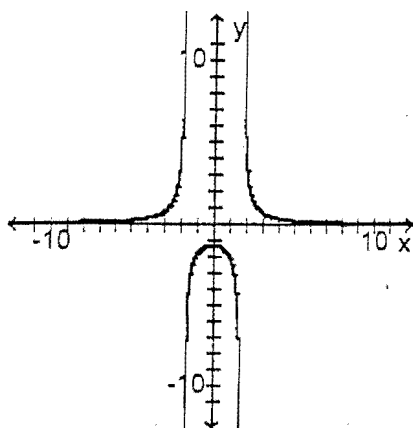


- A) $D = [\frac{2}{5}, \infty)$, $R = [0, \infty)$ B) $D = (-\infty, \frac{2}{5}]$, $R = (-\infty, 0]$
 C) $D = [0, \infty)$, $R = [-\frac{1}{3}, \infty)$ D) $D = (-\infty, \infty)$, $R = (-\infty, \infty)$

Review Questions for Math 111, Part 1

Find the domain and the range for the function.

8)



Vertical Asymptotes at
 $x = \sqrt{3}$ & $x = -\sqrt{3}$

y-intercept $(0, -4/3)$

8) —

A) $D = (-\infty, 3) \cup (-3, \infty)$, $R = (-\infty, \infty)$

B) $D = [-\sqrt{3}, \sqrt{3}]$, $R = (-\infty, 0) \cup (0, \infty)$

C) $D = (-\infty, -\sqrt{3}) \cup (-\sqrt{3}, \sqrt{3}) \cup (\sqrt{3}, \infty)$,
 $R = (-\infty, -\frac{4}{3}] \cup (0, \infty)$

D) $D = (-\infty, \infty)$, $R = (-\infty, \infty)$

Specify the domain of the function.

9) $y = \sqrt{3 - x}$

9) —

A) $x > \sqrt{3}$

B) All real numbers

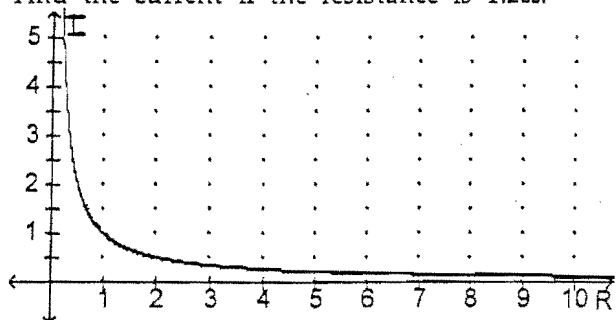
C) $x \leq 3$

D) $x \neq 3$

Solve.

- 10) The graph shows the relationship between current I and resistance R if the voltage is fixed. Find the current if the resistance is 1.2Ω .

10) —



A) 0.6 A

B) 0.8 A

C) 1.2 A

D) 1.0 A

- 11) The function $A(x) = 1.06x - .02x^3$ gives the approximate alcohol level (in tenths of a percent) in a person's blood x hours after drinking about 8 ounces of 100-proof whiskey. What would the person's alcohol level be 7 hours after drinking? Give answer as a percent.

11) —

A) 0.56%

B) 0.056%

C) 0.059%

D) 0.59%

Hint: Divide by 10 to get "tenths of a percent"

Review Questions for Math 111, Part 1

Solve.

12) The function

12) —

$$E(x) = 0.0032x^3 + 0.0055x^2 + 0.164x + 1.1$$

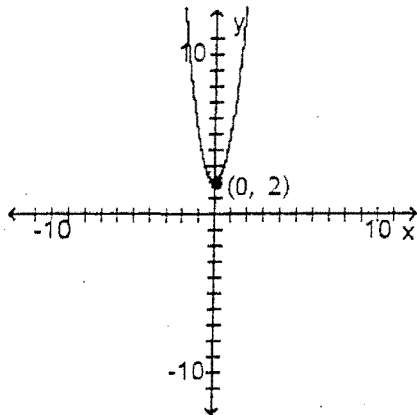
gives the approximate total earnings of a company, in millions of dollars, where $x = 0$ corresponds to 1996, $x = 1$ corresponds to 1997, and so on. This model is valid for the years from 1996 to 2000. Determine the earnings for 1999.

- A) \$1.48 million B) \$1.63 million C) \$1.73 million D) \$2.05 million

Determine the intervals over which the function is increasing and decreasing.

13)

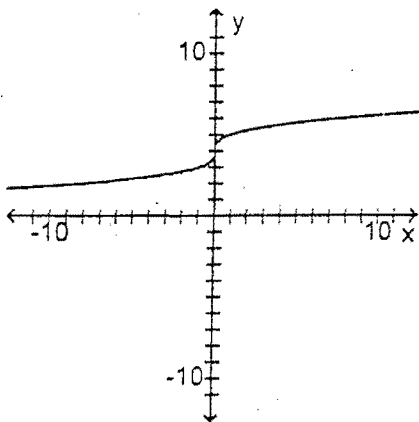
13) —



- A) Increasing $(-\infty, 0]$; Decreasing $(-\infty, 0]$ B) Increasing $(\infty, 0]$; Decreasing $[0, -\infty)$
C) Increasing $(-\infty, 0]$; Decreasing $[0, \infty)$ D) Increasing $[0, \infty)$; Decreasing $(-\infty, 0]$

14)

14) —



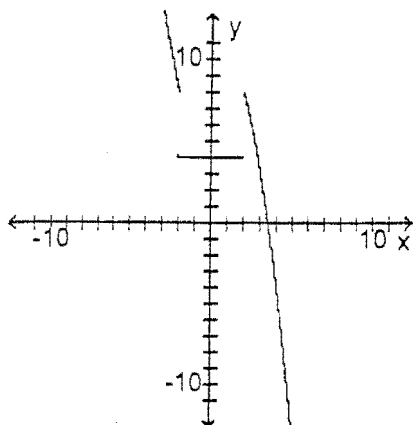
- A) Increasing for all reals; Decreasing $\emptyset$ B) Increasing $\emptyset$; Decreasing for all reals
C) Increasing $(-\infty, 0]$; Decreasing $[0, \infty)$ D) Increasing $[0, \infty)$; Decreasing $(-\infty, 0]$

Review Questions for Math 111, Part 1

Determine the intervals over which the function is increasing and decreasing.

15)

15) —



- A) Increasing $(-\infty, -2) \cup (2, \infty)$; Decreasing $\emptyset$
- B) Increasing $(-2, 2)$; Decreasing $(-\infty, -2) \cup (2, \infty)$
- C) Increasing $\emptyset$; Decreasing $(-\infty, -2) \cup (2, \infty)$
- D) Increasing $(2, \infty)$; Decreasing $(-\infty, -2)$

Solve.

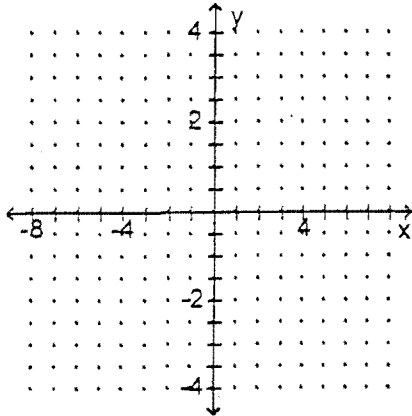
- 16) The number of mosquitoes $M(x)$, in millions, in a certain area depends on the June rainfall x , in inches: $M(x) = 2x - x^2$. What rainfall produces the maximum number of mosquitoes? 16) —
 A) 4 in. B) 2 in. C) 0 in. D) 1 in.
- 17) John owns a hotdog stand. His profit is represented by the equation $P = -x^2 + 12x + 45$, with P being profits and x the number of hotdogs sold. What is the most he can earn? 17) —
 A) \$36 B) \$117 C) \$63 D) \$81

Review Questions for Math 111, Part 1

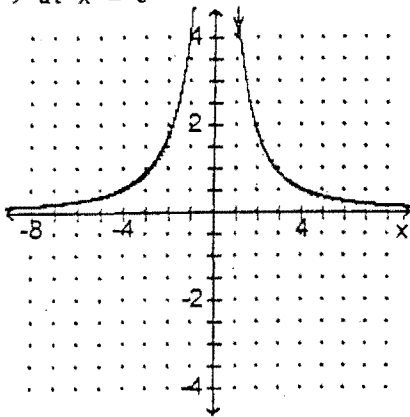
Graph the function and find any relative maxima or minima.

18) $f(x) = \frac{9x}{x^2 + 16}$

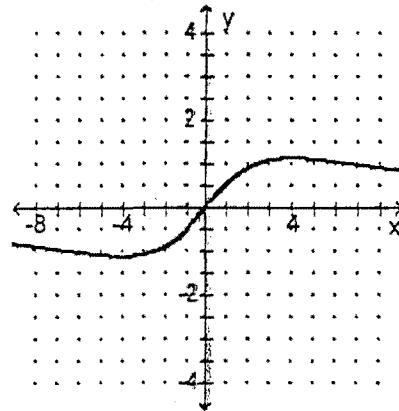
18) —



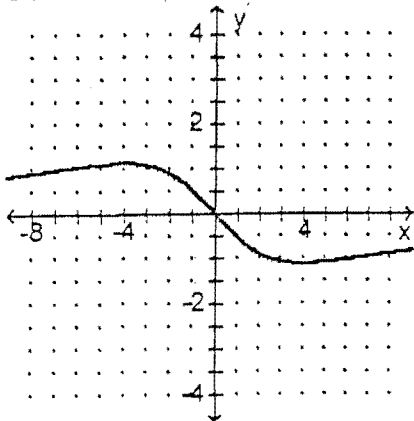
- A) Relative maximum:
9 at $x = 0$



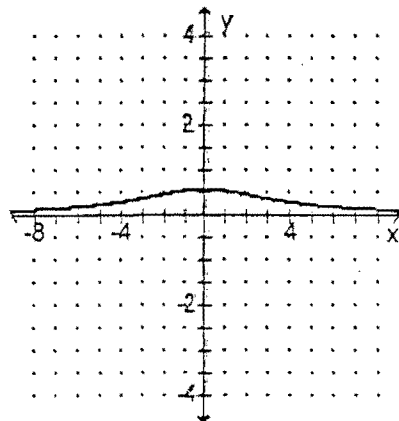
- B) Rel min: $-9/8$ at $x = -4$
Rel max: $9/8$ at $x = 4$



- C) Rel max: $9/8$ at $x = -4$
Rel min: $-9/8$ at $x = 4$



- D) Relative maximum:
 $\frac{9}{16}$ at $x = 0$

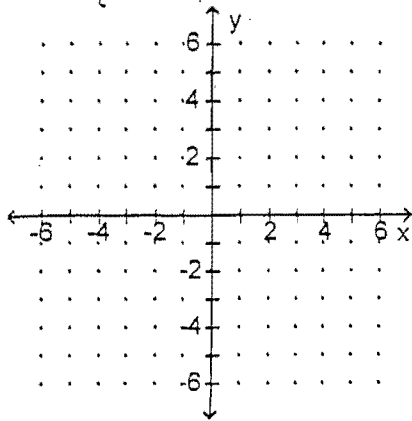


Review Questions for Math 111, Part 1

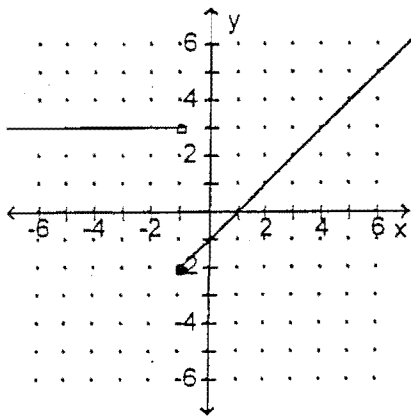
Graph the function.

$$19) \quad f(x) = \begin{cases} 3, & \text{for } x \geq 1 \\ -1 - x, & \text{for } x < 1 \end{cases}$$

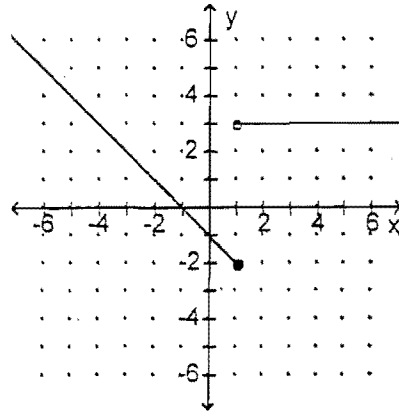
19) —



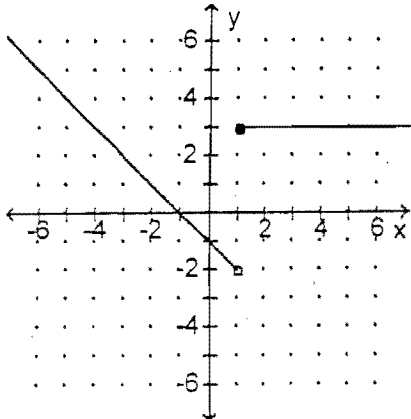
A)



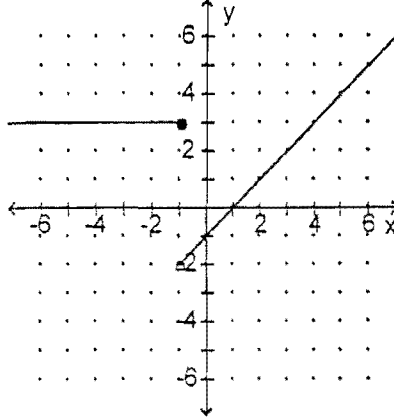
B)



C)



D)

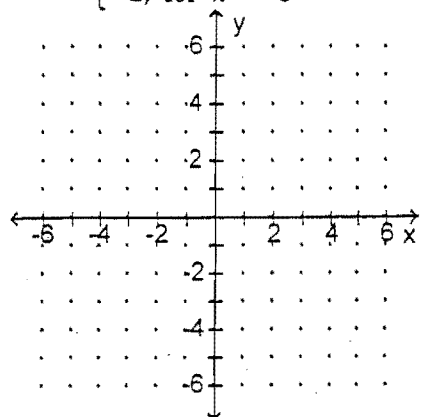


Review Questions for Math 111, Part 1

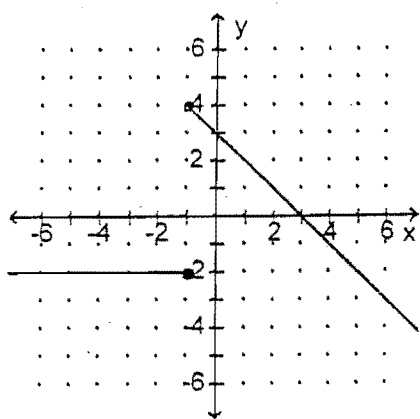
Graph the function.

20) $f(x) = \begin{cases} x + 4, & \text{for } x > 0 \\ -2, & \text{for } x \leq 0 \end{cases}$

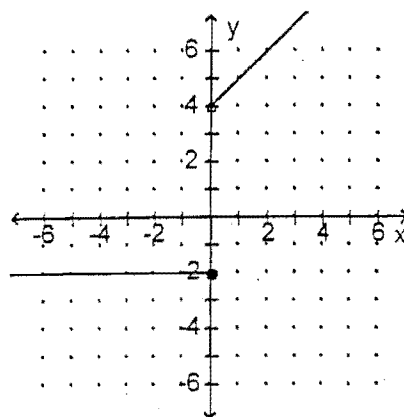
20) —



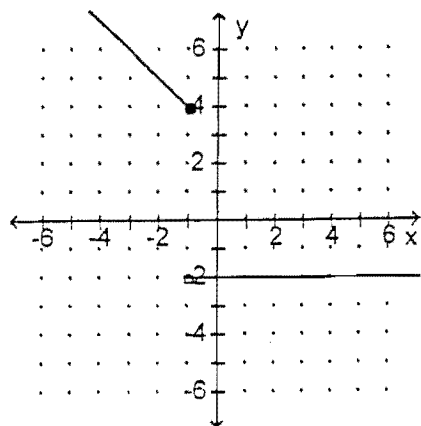
A)



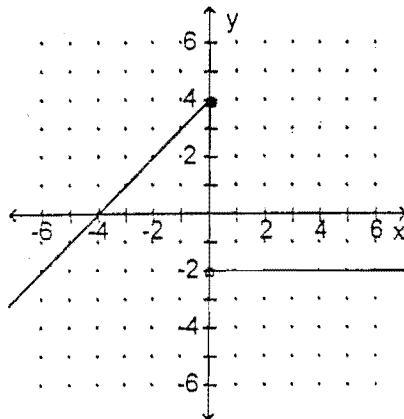
B)



C)



D)

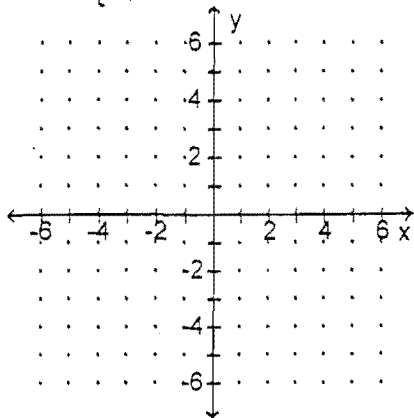


Review Questions for Math 111, Part 1

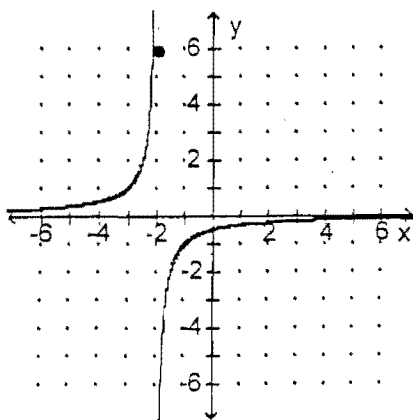
Graph the function.

21) $f(x) = \begin{cases} \frac{1}{x+2}, & \text{for } x \neq -2 \\ 6, & \text{for } x = -2 \end{cases}$

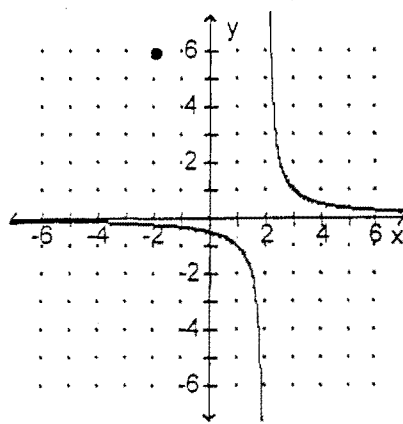
21) —



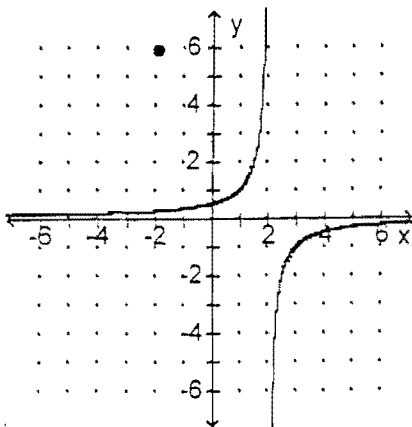
A)



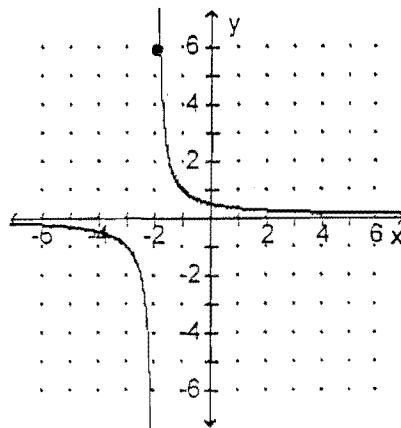
B)



C)



D)

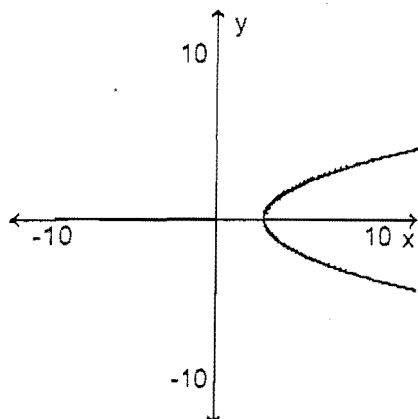


Review Questions for Math 111, Part 1

Determine if the graph is symmetric with respect to x-axis, y-axis, and origin.

22)

22) —



A) x-axis

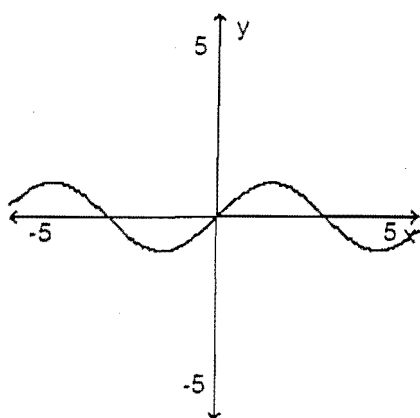
B) y-axis

C) Origin

D) x-axis, origin

23)

23) —



A) x-axis

B) y-axis

C) origin

D) no symmetry

Determine whether the equation is symmetric with respect to the x-axis, the y-axis, and the origin.

24) $y = 2x^2 + 4$

24) —

A) Origin

B) y-axis

C) x-axis, origin

D) x-axis

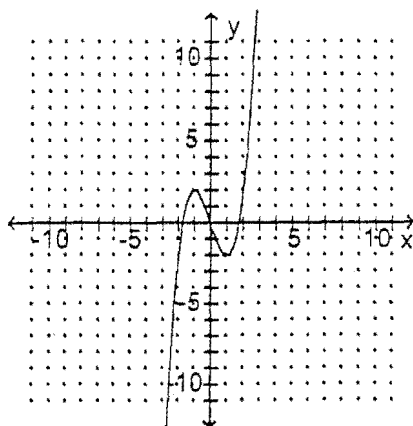
E) y-axis, origin

Review Questions for Math 111, Part 1

Determine if the given function is even, odd, or neither.

25)

25) —



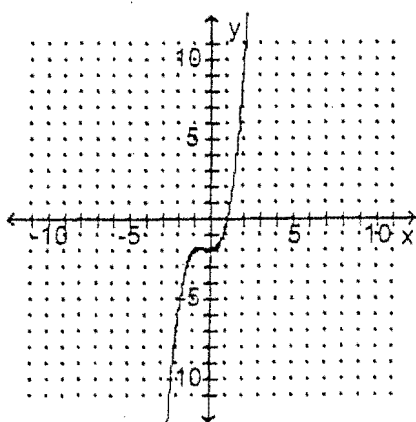
A) Odd

B) Even

C) Neither

26)

26) —



A) Even

B) Odd

C) Neither

Determine if the function is even, odd, or neither.

27) $f(x) = -9x^5 - 4x^3$

27) —

A) Neither

B) Odd

C) Even

Answer the question.

28) How can the graph of $f(x) = \frac{1}{2}(x+1)^2 - 1$ be obtained from the graph of $y = x^2$?

28) —

A) Shift it horizontally 1 units to the right. Stretch it vertically by a factor of 2. Shift it 1 units up.

B) Shift it horizontally 1 units to the right. Shrink it vertically by a factor of $\frac{1}{2}$. Shift it 1 units down.

C) Shift it horizontally 1 units to the left. Shrink it vertically by a factor of $\frac{1}{2}$. Shift it 1 units down.

D) Shift it horizontally 1 units to the left. Shrink it vertically by a factor of 2. Shift it 1 units down.

Review Questions for Math 111, Part 1

Answer the question.

- 29) How can the graph of $f(x) = \frac{7}{x} + 8$ be obtained from the graph of $y = \frac{1}{x}$? 29) —
- A) Stretch it vertically by a factor of 7. Shift it 8 units up.
 B) Shift it horizontally 7 units to the right. Shift it 8 units up.
 C) Shift it horizontally 7 units to the left. Shift it 8 units down.
 D) Shrink it vertically a factor of $\frac{1}{7}$. Shift it 8 units up.

- 30) How can the graph of $f(x) = 0.5(x + 8)^2 - 11$ be obtained from the graph of $y = x^2$? 30) —
- A) Shift it horizontally 8 units to the left. Shrink it horizontally by a factor of 0.5. Shift it 11 units down.
 B) Shift it horizontally 8 units to the left. Shrink it vertically by a factor of 0.5. Shift it 11 units down.
 C) Shift it horizontally 11 units to the left. Stretch it vertically by a factor of 10. Shift it 8 units down.
 D) Shift it horizontally 8 units to the right. Shrink it vertically by a factor of 0.5. Shift it 11 units up.

Write an equation for a function that has a graph with the given characteristics.

- 31) The shape of $y = x^2$ is vertically stretched by a factor of 9, and the resulting graph is reflected across the x-axis. 31) —
- A) $f(x) = 9x^2$ B) $f(x) = 9(x - 9)x^2$ C) $f(x) = -9x^2$ D) $f(x) = (x - 9)^2$
- 32) The shape of $y = x^3$ is shifted 8.8 units to the right and then vertically shrunk by a factor of .3. 32) —
- A) $f(x) = .3x^3 + 8.8$ B) $f(x) = .3(x + 8.8)^3$ C) $f(x) = .3(x - 8.8)^3$ D) $f(x) = 8.8(x - .3)^3$
- 33) The shape of $y = \sqrt[3]{x}$ is shifted 8.6 units to the left. This graph is then vertically stretched by a factor of 1.2. Finally, the graph is reflected across the x-axis. 33) —
- A) $f(x) = -1.2\sqrt[3]{x + 8.6}$ B) $f(x) = 1.2\sqrt[3]{x + 8.6}$
 C) $f(x) = -1.2\sqrt[3]{x - 8.6}$ D) $f(x) = -8.6\sqrt[3]{x + 1.2}$

For the pair of functions, perform the indicated operation.

- 34) $f(x) = 9x^2 - 7x$, $g(x) = x^2 - 5x - 14$ 34) —
 Find f/g .
- A) $\frac{9x^2 - 7x}{x^2 - 5x - 14}$ B) $\frac{9 - x}{14}$ C) $\frac{9x}{x + 1}$ D) $\frac{9x - 7}{-5}$
- 35) $f(x) = \sqrt{3x + 4}$, $g(x) = \sqrt{16x - 4}$ 35) —
 Find fg .
- A) $(\sqrt{3x + 4})(\sqrt{16x - 4})$ B) $(3x + 4)(16x - 4)$
 C) $(4x - 2)(\sqrt{3x + 4})$ D) $(3x + 4)(4x - 2)$
- 36) $f(x) = 9x + 3$, $g(x) = 2x - 1$ 36) —
 Find fg .
- A) $18x^2 - 3x - 3$ B) $18x^2 + 5x - 3$ C) $18x^2 - 3$ D) $11x^2 - 3x + 2$

Review Questions for Math 111, Part 1

Find the indicated composite for the pair of functions.

37) Given $f(x) = \frac{4}{x-8}$ and $g(x) = \frac{5}{4x}$, find $(f \circ g)(x)$.

37) —

A) $(f \circ g)(x) = \frac{16x}{5 + 32x}$

B) $(f \circ g)(x) = \frac{4x}{5 - 32x}$

C) $(f \circ g)(x) = \frac{16x}{5 - 32x}$

D) $(f \circ g)(x) = \frac{5x - 40}{16x}$

38) Given $f(x) = 4x^2 + 5x + 4$ and $g(x) = 5x - 3$, find $(g \circ f)(x)$.

38) —

A) $(g \circ f)(x) = 20x^2 + 25x + 23$

B) $(g \circ f)(x) = 20x^2 + 25x + 17$

C) $(g \circ f)(x) = 4x^2 + 5x + 1$

D) $(g \circ f)(x) = 4x^2 + 25x + 17$

39) Given $f(x) = \frac{8}{x}$ and $g(x) = 5x^4$, find $(g \circ f)(x)$.

39) —

A) $\frac{8}{5x^4}$

B) $\frac{5x^4}{8}$

C) $\frac{20,480}{x^4}$

D) $\frac{5x^4}{4,096}$

Use a grapher to estimate the real-number zeros of the polynomial function.

40) $f(x) = 2x^3 + 6.33x^2 + 0.67x - 1$

40) —

A) 3, 0.5, -0.33

B) -3, -0.5, 0.33

C) 3, -0.5, -0.33

D) -3, 2, 3

Use a grapher to estimate the relative minima or maxima of the given function.

41) $f(x) = x^2 - 2x - 15$;

41) —

(Round approximations to one decimal place.)

A) Rel min: -16.0 at $x = 1.0$

B) Rel min: -15.9 at $x = 0.7$

C) Rel min: -15.8 at $x = 1.4$

D) Rel min: -15.6 at $x = 1.6$

42) $f(x) = 3x^4 + 16x^3 + 24x^2 + 32$

42) —

A) Rel max: 32 at $x = -2$, Rel min: 32 at $x = 0$

B) Rel max: 48 at $x = 2$

C) Rel min: 32 at $x = -2$

D) Rel max: 48 at $x = -2$, Rel min: 32 at $x = 0$

Solve.

43) $(4m + 2)^2 - 11(4m + 2) + 30 = 0$

43) —

A) -2, - $\frac{7}{4}$

B) -4, $\frac{7}{4}$

C) -1, - $\frac{3}{4}$

D) 1, $\frac{3}{4}$

44) $(2p - 2)^2 = 10(2p - 2) - 21$

44) —

A) - $\frac{1}{2}$, - $\frac{5}{2}$

B) $\frac{5}{2}$, $\frac{9}{2}$

C) - $\frac{5}{2}$, - $\frac{9}{2}$

D) $\frac{1}{2}$, $\frac{5}{2}$

45) $x^{2/5} - 13x^{1/5} + 12 = 0$

45) —

A) 1, 248,832

B) ± 1 , $\pm 248,832$

C) -1, -248,832

D) 1, $12^{1/5}$

Find the range of the given function.

46) $y = x^2 + 2$

46) —

A) $(-\infty, 0]$

B) $[0, \infty)$

C) $(-\infty, -2]$

D) $[2, \infty)$

Review Questions for Math 111, Part 1

Find the range of the given function.

47) $y = -3x^2 - 30x - 77$

A) $[-2, \infty)$

B) $[-5, \infty)$

C) $(-\infty, -2]$

D) $(-\infty, -5]$

47) —

48) $f(x) = -2x^2 + 12x - 23$

A) $(-\infty, -5]$

B) $(-\infty, -3]$

C) $[-5, \infty)$

D) $[-3, \infty)$

48) —

Solve.

49) The number of mosquitoes $M(x)$, in millions, in a certain area depends on the June rainfall x , in inches $M(x) = 3x - x^2$. What rainfall produces the maximum number of mosquitoes?

A) 3 in.

B) 1.5 in.

C) 9 in.

D) 0 in.

49) —

50) A rock falls from a tower that is 49 m high. As it is falling, its height is given by the formula $h = 49 - 4.9t^2$. How many seconds will it take for the rock to hit the ground ($h=0$)?

A) 7 sec

B) 3.2 sec

C) 10.2 sec

D) 500 sec

50) —

51) A projectile is thrown upward so that its distance above the ground after t seconds is $h = -13t^2 + 494t$. After how many seconds does it reach its maximum height?

A) 9 sec

B) 38 sec

C) 28.5 sec

D) 19 sec

51) —

Review Questions for Math 111, Part 1

Write a slope-intercept equation for a line with the given characteristics.

52) $m = -\frac{3}{2}$, passes through $(-4, -8)$

A) $y = \frac{3}{2}x + 14$

B) $y = -\frac{3}{2}x + 14$

C) $y = -\frac{3}{2}x - 14$

D) $y = -\frac{2}{3}x + \frac{28}{3}$

52) _____

Write the equation of a line connecting the given points. Write the equation in slope-intercept form.

53) $(-8, 2), (-6, 7)$

A) $x = -\frac{5}{2}y + 22$

B) $x = \frac{5}{2}y + 22$

C) $y = -\frac{5}{2}x + 22$

D) $y = \frac{5}{2}x + 22$

53) _____

Determine the equation of the line described. Put answer in the slope-intercept form, if possible.

54) Through $(9, 8)$, perpendicular to $-5x + 2y = -61$

A) $y = \frac{9}{2}x + \frac{61}{2}$

B) $y = -\frac{2}{5}x + \frac{58}{5}$

C) $y = -\frac{5}{2}x - \frac{5}{2}$

D) $y = \frac{2}{5}x + \frac{58}{5}$

54) _____

55) Through $(-8, 11)$, parallel to $-5x - 3y = 31$

A) $y = -\frac{5}{3}x - \frac{7}{3}$

B) $y = -\frac{8}{3}x - \frac{31}{3}$

C) $y = \frac{5}{3}x + \frac{7}{3}$

D) $y = -\frac{3}{5}x - \frac{11}{5}$

55) _____

Solve.

56) $\frac{7}{x^2 + 7x} < \frac{5}{3x + 1}$

A) $\left(-7, \frac{-2\sqrt{21}-7}{5}\right) \cup \left(-\frac{1}{3}, 0\right) \cup \left(\frac{2\sqrt{21}-7}{5}, \infty\right)$

B) $\left(\frac{-2\sqrt{21}-7}{5}, -\frac{1}{3}\right) \cup \left(0, \frac{2\sqrt{21}-7}{5}\right)$

C) $\left(-\infty, -\frac{1}{3}\right) \cup (0, \infty)$

D) $(-\infty, \infty)$

56) _____

57) $\frac{x-5}{x+4} - \frac{x+3}{x-2} \leq 0$

A) $(-\infty, -4) \cup (2, \infty)$

B) $\left(-\infty, -\frac{1}{7}\right]$

C) $\left[-4, -\frac{1}{7}\right] \cup (2, \infty)$

D) $(-\infty, -4) \cup \left[-\frac{1}{7}, 2\right]$

57) _____

58) How long will it take for \$5600 to grow to \$29,500 at an interest rate of 8.7% if the interest is compounded continuously? Round the number of years to the nearest hundredth.

A) 0.19 yr

B) 19.1 yr

C) 1909.91 yr

D) 1.91 yr

58) _____

59) Suppose that \$6000 is invested at an interest rate of 5.3% per year, compounded continuously. What is the doubling time?

A) 12.1 years

B) 2 years

C) 13.1 years

D) 14.1 years

59) _____

60) Find the equilibrium point for the given supply and demand functions. Here y represents price and x represents quantity.

$y = 1147 - 5x$ (demand)

$y = 5x - 833$ (supply)

A) 198, \$157

B) 1142, \$838

C) 157, \$198

D) -833, \$1147

60) _____

Review Questions for Math 111, Part 2

Determine whether the given number is a zero of the polynomial.

1) 5; $f(x) = 4x^3 - 19x^2 - 2x - 15$

A) Yes

B) No

1) ____

2) 2; $f(x) = 4x^4 + 12x^3 - 18x^2 - 10x + 8$

A) Yes

B) No

2) ____

A polynomial $P(x)$ and a divisor $d(x)$ are given. Express $P(x)$ in the form $d(x) \cdot Q(x) + R(x)$, where $Q(x)$ is the quotient and $R(x)$ is the remainder.

3) $P(x) = 3x^3 - x^2 + 2x + 7$

$d(x) = x + 1$

A) $(x - 1) \cdot (3x^2 + 2x) + 7$

B) $(x + 1) \cdot (3x^2 + 2x) + 7$

C) $(x + 1) \cdot (3x^2 - 4x + 2) + 9$

D) $(x + 1) \cdot (3x^2 - 4x + 6) + 1$

3) ____

Find the zeros of the polynomial function. List each zero the number of times it occurs.

4) $f(x) = (x + 5)^2(x - 1)$

A) 5, 5, 1

B) -5, 1

C) -5, 1, 1

D) -5, -5, 1

4) ____

5) $f(x) = (x^2 + 13x + 36)^2$

A) $-\sqrt{9}, -\sqrt{9}, -\sqrt{9}, -\sqrt{9}$

B) 4, 4, 9, 9

C) -9, -9, -4, -4

D) $-\sqrt{9}, \sqrt{9}, -\sqrt{9}, \sqrt{9}$

5) ____

6) $f(x) = x^3 + 5x^2 - x - 5$

A) -1, 1, 5

B) -5, -1, 1

C) -5, 1, 1

D) -5, -5, 1

6) ____

Find a polynomial $P(x)$ of lowest degree with rational coefficients having the given zeros.

7) $6i$ and $\sqrt{8}$

A) $P(x) = x^4 - 56x^2 + 288$

B) $P(x) = x^4 + 56x^2 + 288$

C) $P(x) = x^4 - 28x^2 - 288$

D) $P(x) = x^4 + 28x^2 - 288$

7) ____

8) -3, -3, and $\sqrt{5}$

A) $P(x) = x^3 + 3x^2 - 5x - 15$

B) $P(x) = x^3 - 3x^2 - 5x + 15$

C) $P(x) = x^4 + 6x^3 + 4x^2 - 30x - 45$

D) $P(x) = x^4 - 6x^3 - 4x^2 + 30x + 45$

8) ____

For the polynomial, one zero is given. Find all others.

9) $f(x) = x^4 - 32x^2 - 144$; $-2i$

A) $2i, 6i, -6i$

B) $2i, 12, -12$

C) $2i, 6, -6$

D) $2i, 12i, -12i$

9) ____

Give all possible rational zeros for the polynomial.

10) $P(x) = 2x^3 + 6x^2 + 12x - 8$

A) $\pm 1, \pm 2, \pm 4$

B) $\pm 1, \pm 2, \pm 4, \pm 8$

C) $\pm 1, \pm 1/2, \pm 2, \pm 4, \pm 8$

D) $\pm 1, \pm 1/2, \pm 1/4, \pm 1/8, \pm 2$

10) ____

11) $P(x) = x^3 - 6x^2 + 8x - 24$

A) $\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 8, \pm 12, \pm 24$

B) $\pm 1, \pm 2, \pm 3, \pm 4, \pm 24$

C) $\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 12, \pm 24$

D) $\pm 1, \pm 1/2, \pm 2, \pm 3, \pm 4, \pm 6, \pm 8, \pm 12, \pm 24$

11) ____

Review Questions for Math 111, Part 2

Give all possible rational zeros for the polynomial.

12) $P(x) = 7x^3 + 11x^2 + 2x - 14$

A) $\pm 1, \pm 1/2, \pm 7, \pm 7/2, \pm 1/7, \pm 1/14$

C) $\pm 1, \pm 2, \pm 7, \pm 14$

B) $\pm 1, \pm 1/7, \pm 2, \pm 7, \pm 14$

D) $\pm 1, \pm 1/7, \pm 2, \pm 2/7, \pm 7, \pm 14$

12) —

Find all the zeros of the polynomial function. List each zero the number of times it occurs.

13) $f(x) = x^3 - 2x^2 - 49x + 98$

A) $-2, 2, 7$

B) $-7, 2, 7$

C) 2

D) $49, 2, 98$

13) —

14) $f(x) = 6x^3 + 28x^2 + 14x - 8$

A) $\frac{1}{3}, \frac{1}{3}, -4$

B) $-1, \frac{1}{3}, 4$

C) $-1, -4, \frac{1}{3}$

D) $-\frac{1}{3}, -4, \frac{1}{3}$

14) —

15) $f(x) = x^3 + 343$

A) $7, \frac{7 + 7\sqrt{3}i}{2}, \frac{7 - 7\sqrt{3}i}{2}$

B) $-7, \frac{7 + 7\sqrt{3}i}{2}, \frac{7 - 7\sqrt{3}i}{2}$

C) $-7, \frac{7 + 7\sqrt{3}i}{2}, -\frac{7 + 7\sqrt{3}i}{2}$

D) $\frac{-7}{2}, \frac{7 + 7\sqrt{3}i}{2}, \frac{7 - 7\sqrt{3}i}{2}$

15) —

Find the vertical asymptote(s) of the given function.

16) $f(x) = \frac{x - 1}{x^2 + 7}$

A) $x = -7$

B) $x = 7$

C) $x = 1, x = -1$

D) None

16) —

17) $h(x) = \frac{(x - 7)(x + 8)}{x^2 - 9}$

A) $x = 3, x = -3$

B) $x = -7, x = 8$

C) None

D) $x = 7, x = -8$

17) —

18) $g(x) = \frac{x - 7}{(x - 1)(x + 6)}$

A) $x = -1, x = 6$

B) $x = 1, x = -6$

C) $x = -7$

D) $x = 7$

18) —

Find the horizontal asymptote of the given function.

19) $g(x) = \frac{x + 7}{x^2 - 5}$

A) None

B) $y = -7$

C) $y = 5$

D) $y = 0$

19) —

20) $h(x) = \frac{10x^2}{5x^2 - 6}$

A) $y = 2$

B) $y = \sqrt{6}$

C) $y = 6$

D) None

20) —

Find the oblique asymptote of the given function.

21) $f(x) = \frac{x + 3}{2x^2 + 3x - 9}$

A) None

B) $x = y + 2$

C) $y = x + 3$

D) $y = x + 2$

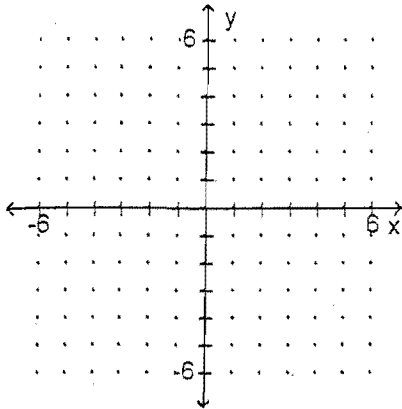
21) —

Review Questions for Math 111, Part 2

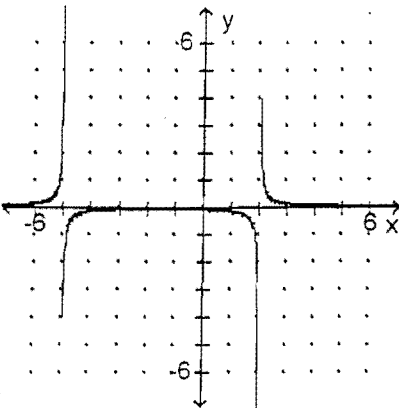
Graph the function.

22) $f(x) = \frac{1}{(x - 5)(x + 2)}$

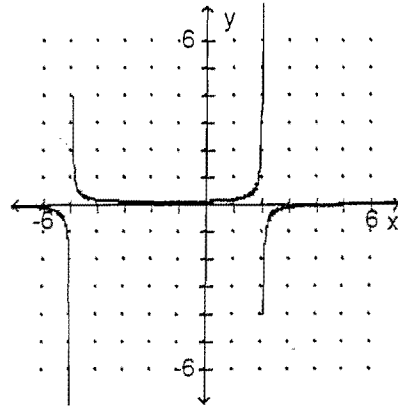
22) —



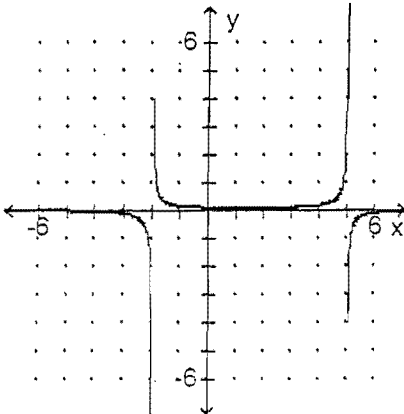
A)



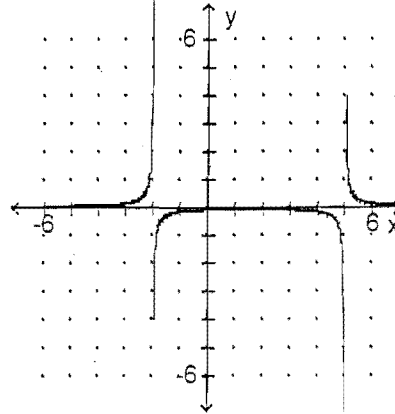
B)



C)



D)

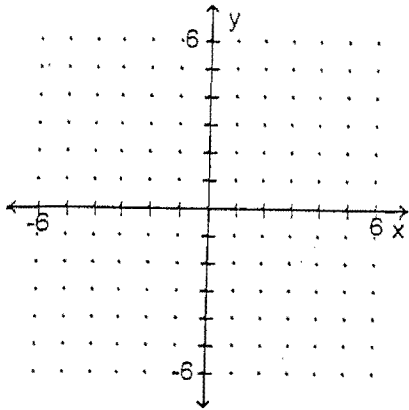


Review Questions for Math 111, Part 2

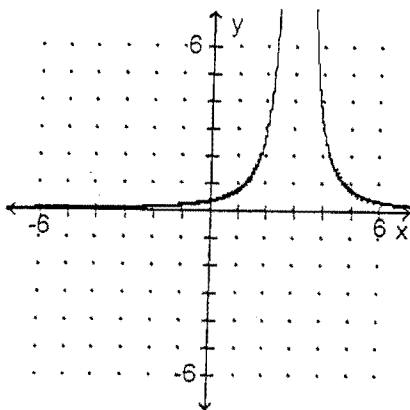
Graph the function.

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

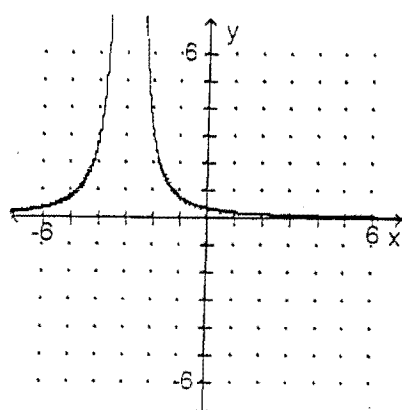
23) —



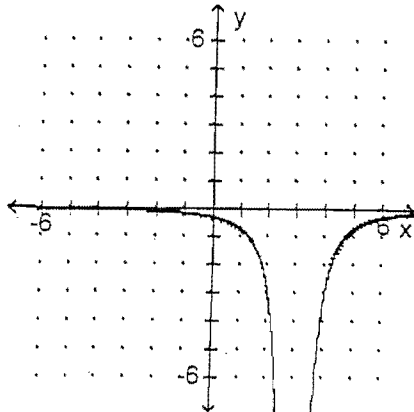
A)



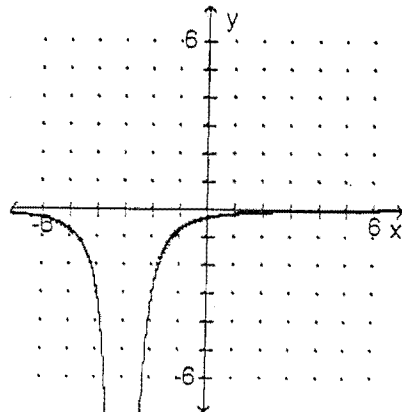
B)



C)



D)

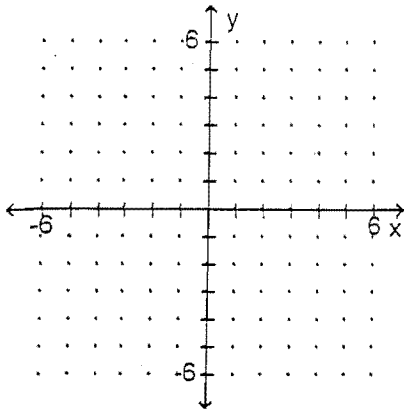


Review Questions for Math 111, Part 2

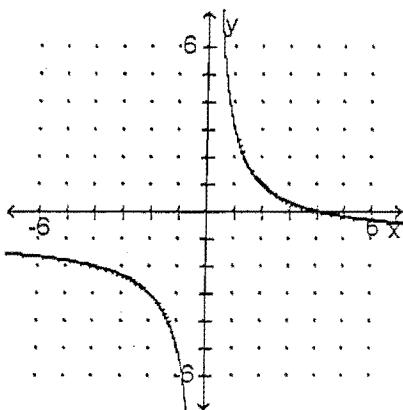
Graph the function.

24) $f(x) = \frac{x+4}{x}$

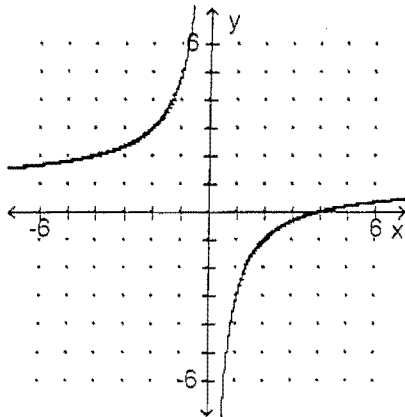
24) —



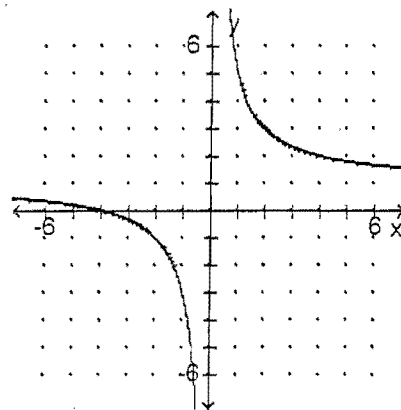
A)



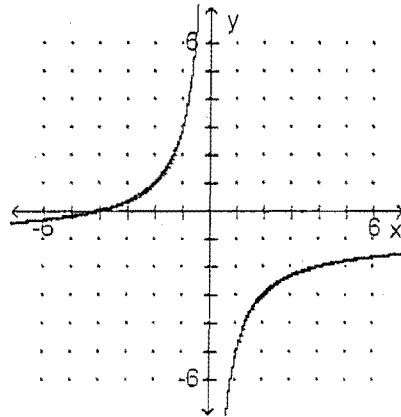
C)



B)



D)

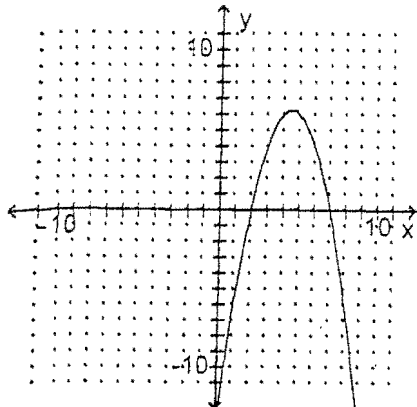


Review Questions for Math 111, Part 2

Solve the given inequality (a related function is graphed).

25) $-x^2 + 2x \leq -7x + 14$

25) —



x-intercepts: (2,0), (7,0)

A) $(-\infty, 2] \cup [7, \infty)$

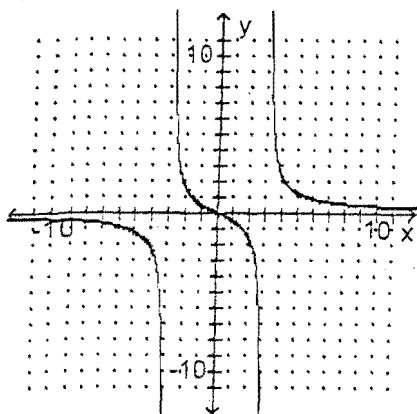
B) $(-\infty, -2) \cup (7, \infty)$

C) $(2, 7) \cup (7, \infty)$

D) $[2, 7]$

26) $\frac{4x}{x^2 - 9} \geq 0$

26) —



critical values: -3, 0, 3

A) $(-\infty, -3) \cup [0, 3)$

B) $(-3, \infty)$

C) $(-3, 0] \cup (3, \infty)$

D) $(-3, 0) \cup (3, \infty)$

Solve.

27) $x^3 + 2x^2 - 13x + 10 > 0$

27) —

A) $(-\infty, -5) \cup (1, 2)$

B) $(-2, -1) \cup (5, \infty)$

C) $(-5, 1) \cup (2, \infty)$

D) $(-\infty, -2) \cup (-1, 5)$

Decide whether the function is one-to-one. If it is, find the inverse function.

28) $\{(-7, -12), (-6, 12), (20, -15)\}$

28) —

A) Not a one-to-one function

B) $\{(-12, -7), (20, -6), (-15, 12)\}$

C) $\{(-12, -7), (12, -6), (-15, 20)\}$

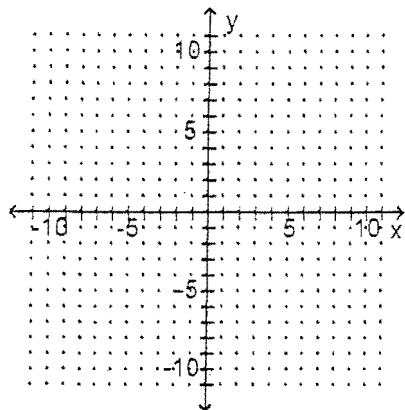
D) $\{(-7, 12), (-7, -6), (-15, 20)\}$

Review Questions for Math 111, Part 2

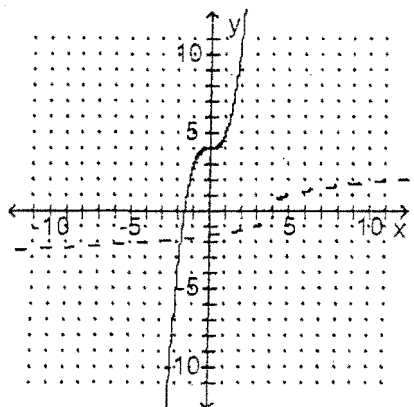
Graph the function as a solid curve and its inverse as a dashed curve on the same axes.

29) $f(x) = x^3 + 4$

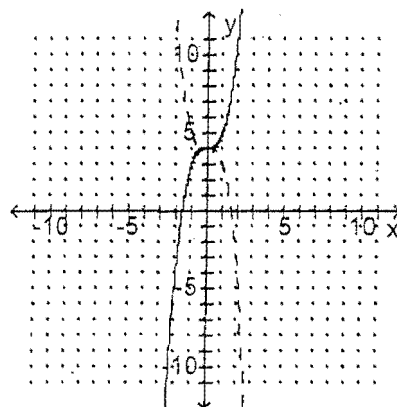
29) —



A)



B)



Determine whether or not the function is one-to-one.

30) $f(x) = |25 - x^2|$

30) —

A) Yes

B) No

Determine whether the given function is one-to-one. If so, find a formula for the inverse.

31) $f(x) = x^3 - 6$

31) —

A) Not a one-to-one function

B) $f^{-1}(x) = \sqrt[3]{x - 6}$

C) $f^{-1}(x) = \sqrt[3]{x} + 6$

D) $f^{-1}(x) = \sqrt[3]{x + 6}$

32) $f(x) = \frac{8}{x - 5}$

32) —

A) $f^{-1}(x) = \frac{x}{-5 + 8x}$

B) $f^{-1}(x) = \frac{5x + 8}{x}$

C) $f^{-1}(x) = \frac{-5 + 8x}{x}$

D) Not a one-to-one function

33) $f(x) = \sqrt{x + 9}$

33) —

A) Not a one-to-one function

B) $f^{-1}(x) = x^2 - 9, x \geq 0$

C) $f^{-1}(x) = (x + 9)^2$

D) $f^{-1}(x) = \sqrt{x - 9}$

Review Questions for Math 111, Part 2

On a grapher, find the following to four decimal places.

34) $e^{-0.886}$

34) —

A) -2.4084

B) -0.7850

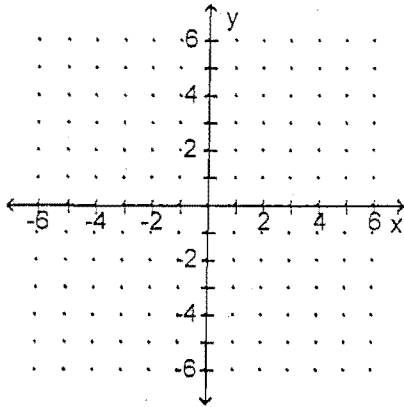
C) 0.7850

D) 0.4123

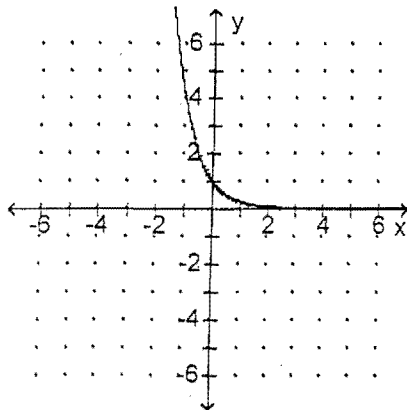
Graph the exponential function.

35) $y = \left(\frac{1}{4}\right)^x$

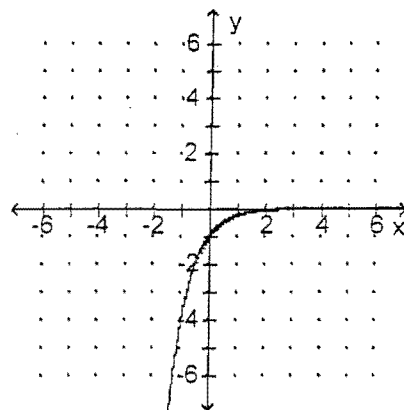
35) —



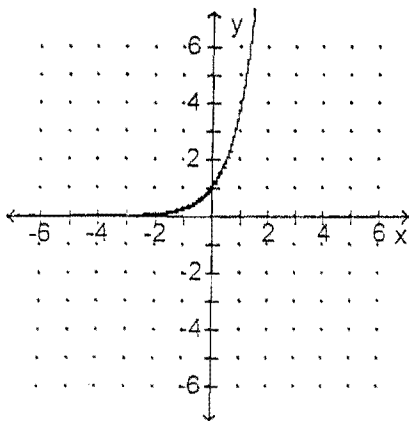
A)



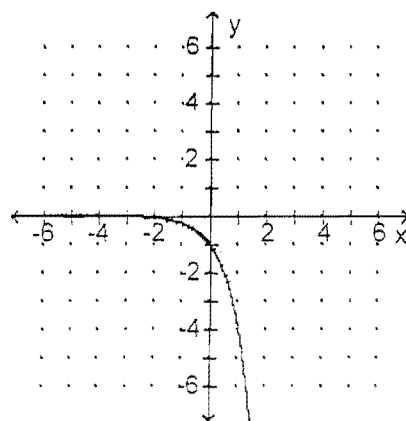
B)



C)



D)

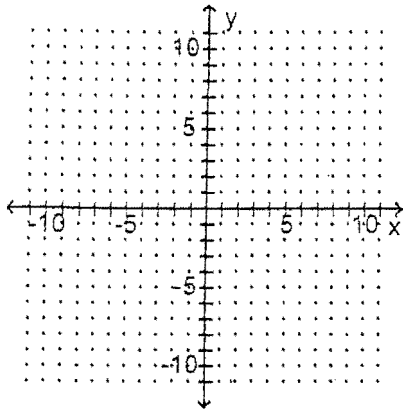


Review Questions for Math 111, Part 2

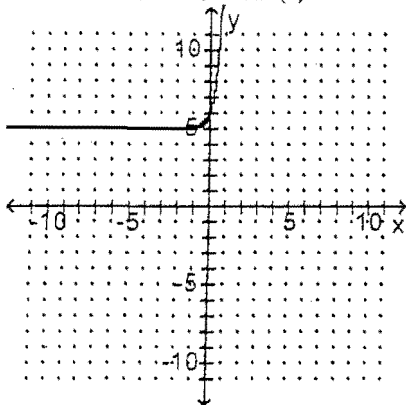
Graph the function. Describe its position relative to the graph of the given equation.

36) $f(x) = e^{3x} + 5$, to $f(x) = e^x$

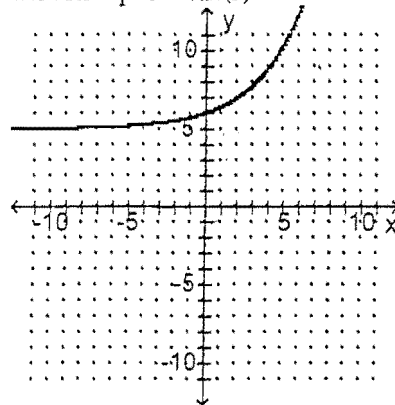
36) —



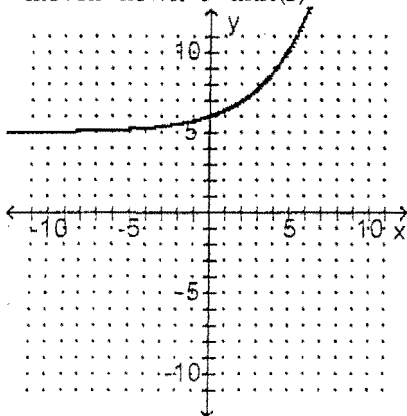
- A) Shrunk horizontally;
moved down 5 unit(s)



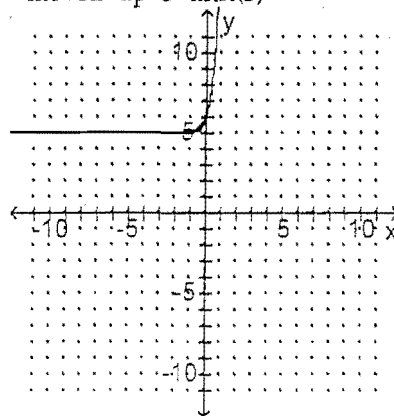
- B) Stretched horizontally;
moved up 5 unit(s)



- C) Stretched horizontally;
moved down 5 unit(s)



- D) Shrunk horizontally;
moved up 5 unit(s)

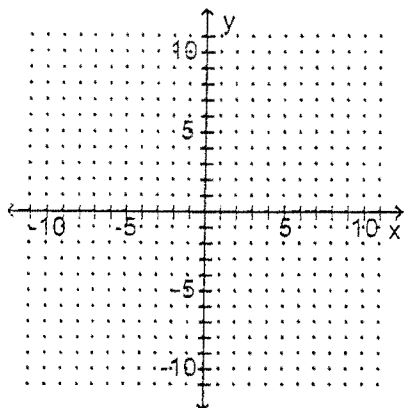


Review Questions for Math 111, Part 2

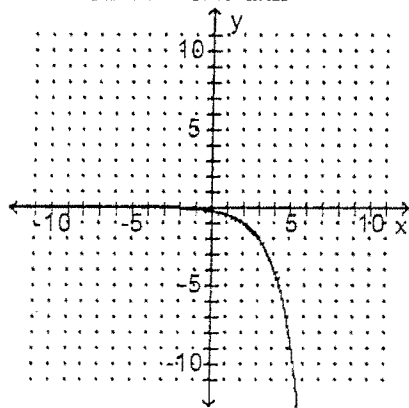
Graph the function. Describe its position relative to the graph of the given equation.

37) $f(x) = -2^{x-2}$, to $f(x) = 2^x$

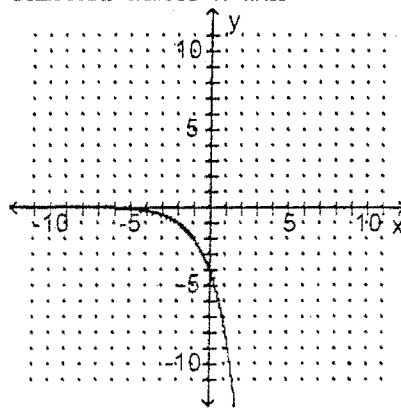
37) —



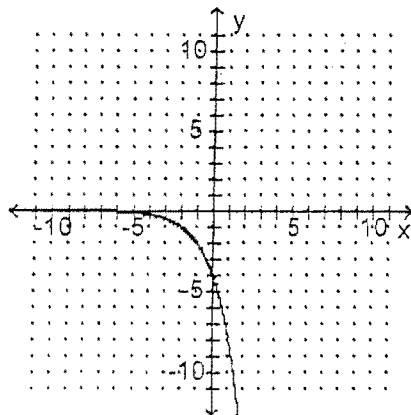
A) Moved left 2 unit(s);
reflected across x-axis



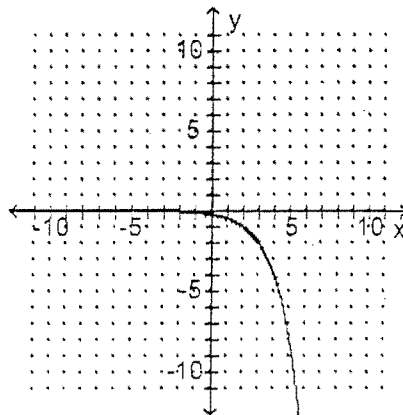
B) Moved right 2 unit(s);
reflected across x-axis



C) Moved left 2 unit(s);
reflected across x-axis



D) Moved right 2 unit(s);
reflected across x-axis



Find the value of the expression.

38) $\log_8 \frac{1}{64}$

38) —

A) 2

B) 8

C) -2

D) -8

39) $\log 0.001$

39) —

A) -1

B) -3

C) -2

D) 0

Review Questions for Math 111, Part 2

Find the value of the expression.

- 40) $\ln e$ 40) —
 A) e B) 1 C) 0 D) -1

- 41) $\ln 1$ 41) —
 A) -1 B) e C) 0 D) 1

Use a calculator to find the logarithm. Round to four decimal places.

- 42) $\log_6 72.57$ 42) —
 A) 1.8608 B) 2.3913 C) 0.4182 D) 12.0950

- 43) $\log_{4.2} 3.2$ 43) —
 A) 0.8105 B) 0.5051 C) 1.2338 D) 0.7619

Solve.

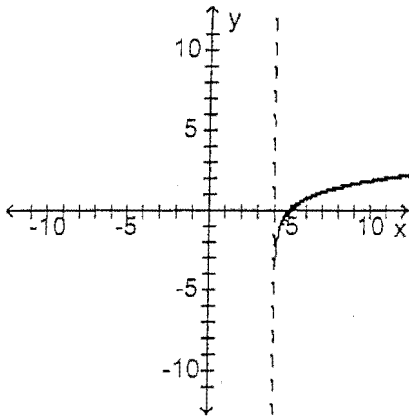
- 44) The population growth of an animal species is described by $P(t) = 400 \log(2t + 3)$ where t is measured in months. Find the population of this species in an area 6 months after the species is introduced. 44) —
 A) 240 B) 470 C) 74 D) 704

Find the domain of the function.

- 45) $f(x) = 4(\log_9 x)^5$ 45) —
 A) $(-\infty, \infty)$ B) $(4, \infty)$ C) $(0, \infty)$ D) $(\frac{36}{5})$

Determine the function which corresponds to the given graph.

- 46) 46) —



The asymptote is $x = 4$.

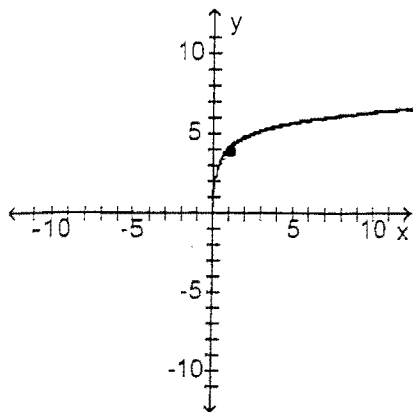
- A) $y = \ln(x + 4)$ B) $y = \ln x - 4$ C) $y = \ln x + 4$ D) $y = \ln(x - 4)$

Review Questions for Math 111, Part 2

Determine the function which corresponds to the given graph.

47)

47) —



The indicated point is (1, 4).

- A) $y = \ln x + 4$ B) $y = \ln x - 4$ C) $y = \ln(x + 4)$ D) $y = \ln(x - 4)$

Write as a sum, difference, and/or product of logarithms. Do not use exponents.

48) $\log_4 xy$

48) —

- A) $\log_2 x + \log_2 y$ B) $\log_2 x - \log_2 y$ C) $\log_4 x + \log_4 y$ D) $\log_4 x - \log_4 y$

49) $\log_4 \frac{1}{2}$

49) —

- A) $\log_4 1 - \log_4 2$ B) $\log_4 2 - \log_4 1$ C) $\log_2 1 - \log_2 2$ D) $\log_4 1 + \log_4 2$

50) $\log_3 \frac{\sqrt[8]{17}}{q^2 p}$

50) —

- A) $\frac{1}{8} \log_3 17 - 2 \log_3 q - \log_3 p$ B) $8 \log_3 17 - 2 \log_3 q - \log_3 8$
C) $\frac{1}{8} \log_3 17 - 2 \log_3 q - 2 \log_3 p$ D) $\frac{1}{8} \log_3 17 - 2 \log_3 q + \log_3 p$

Solve.

51) $3^x = 14$

51) —

- A) $\{ \log 3 - \log 14 \}$ B) $\{ \log 14 - \log 3 \}$ C) $\{ \frac{\log 14}{\log 3} \}$ D) $\{ \frac{\log 3}{\log 14} \}$

Solve the equation. Express the solution in exact form.

52) $\log(x - 3) = 1 - \log x$

52) —

- A) $\{5\}$ B) $\{-5\}$ C) $\{-5, 2\}$ D) $\{-2, 5\}$

53) $\ln(6x - 1) = \ln 4 - \ln(x - 4)$

53) —

- A) $\{4, 4/6\}$ B) $\{25/6\}$ C) $\{0, 25/6\}$ D) $\emptyset$

Find approximate solution(s) of the equation.

54) $xe^{2x} + 4 = 6$

54) —

- A) $\{0.853\}$ B) $\{0.601\}$ C) $\{0.347\}$ D) No solution

Review Questions for Math 111, Part 2

Find approximate solution(s) of the equation.

55) $\log_6 x + \log_6(x - 3) = 2$

55) —

A) $\{-4.685, 7.685\}$

B) $\{7.685\}$

C) $\{3.030\}$

D) No solution

56) $0.173e^{0.05x} = 0.000173$

56) —

A) $\{-138.15511\}$

B) $\{138.155106\}$

C) $\{-60\}$

D) No solution

Review Questions for Math 111, Part 3

Perform the matrix operation.

1) Let $A = \begin{bmatrix} -3 & 6 \\ 0 & 2 \end{bmatrix}$. Find $3A$.

1) ____

A) $\begin{bmatrix} -9 & 18 \\ 0 & 6 \end{bmatrix}$

B) $\begin{bmatrix} -9 & 6 \\ 0 & 2 \end{bmatrix}$

C) $\begin{bmatrix} -9 & 18 \\ 0 & 2 \end{bmatrix}$

D) $\begin{bmatrix} 0 & 9 \\ 3 & 5 \end{bmatrix}$

2) Let $C = \begin{bmatrix} 1 \\ -3 \\ 2 \end{bmatrix}$ and $D = \begin{bmatrix} -1 \\ 3 \\ -2 \end{bmatrix}$. Find $C - 3D$.

2) ____

A) $\begin{bmatrix} 4 \\ -6 \\ 4 \end{bmatrix}$

B) $\begin{bmatrix} 4 \\ -12 \\ 8 \end{bmatrix}$

C) $\begin{bmatrix} -2 \\ 6 \\ -4 \end{bmatrix}$

D) $\begin{bmatrix} -4 \\ 12 \\ -8 \end{bmatrix}$

3) $\begin{bmatrix} -5 & -4 \\ 7 & 2 \\ 4 & 3 \end{bmatrix} + \begin{bmatrix} -6 & -5 \\ 3 & 4 \\ -2 & -4 \end{bmatrix} =$

3) ____

A) $\begin{bmatrix} -11 & -9 \\ 10 & 6 \\ 2 & -1 \end{bmatrix}$

B) $\begin{bmatrix} -11 & -9 \\ -10 & 2 \\ 2 & 1 \end{bmatrix}$

C) $\begin{bmatrix} 1 & 1 \\ 4 & 4 \\ 6 & 6 \end{bmatrix}$

D) $\begin{bmatrix} -11 & 2 \\ 10 & 6 \\ 2 & -1 \end{bmatrix}$

Perform the matrix multiplication.

4) $\begin{bmatrix} -2 & 3 \\ 4 & 2 \end{bmatrix} \begin{bmatrix} -2 & 0 \\ -1 & 2 \end{bmatrix}$

4) ____

A) $\begin{bmatrix} 6 & 1 \\ 4 & -10 \end{bmatrix}$

B) $\begin{bmatrix} 4 & 0 \\ -4 & 4 \end{bmatrix}$

C) $\begin{bmatrix} 4 & -6 \\ -6 & 1 \end{bmatrix}$

D) $\begin{bmatrix} 1 & 6 \\ -10 & 4 \end{bmatrix}$

5) $\begin{bmatrix} -1 & 3 \\ 3 & 2 \end{bmatrix} \begin{bmatrix} 0 & -2 & 6 \\ 1 & -3 & 2 \end{bmatrix}$

5) ____

A) Not defined

B) $\begin{bmatrix} 3 & -7 & 0 \\ 2 & -12 & 22 \end{bmatrix}$

C) $\begin{bmatrix} 3 & 2 \\ -7 & -12 \\ 0 & 22 \end{bmatrix}$

D) $\begin{bmatrix} 0 & -6 & 18 \\ 3 & -6 & 4 \end{bmatrix}$

6) $\begin{bmatrix} 3 & -2 & 1 \\ 0 & 4 & -3 \end{bmatrix} \begin{bmatrix} 3 & 0 \\ -2 & 3 \end{bmatrix}$

6) ____

A) $\begin{bmatrix} 9 & -6 & 3 \\ -6 & 16 & -11 \end{bmatrix}$

B) Not defined

C) $\begin{bmatrix} 9 & -6 \\ -6 & 16 \\ 3 & -11 \end{bmatrix}$

D) $\begin{bmatrix} 9 & 0 \\ 0 & 12 \end{bmatrix}$

Determine whether the matrices are inverses.

7) $\begin{bmatrix} 5 & 3 \\ 3 & 2 \end{bmatrix}, \begin{bmatrix} 2 & -3 \\ -3 & 5 \end{bmatrix}$

7) ____

A) No

B) Yes

Review Questions for Math 111, Part 3

Find the inverse of the matrix (if it exists).

8) $A = \begin{bmatrix} 3 & 1 \\ 5 & 7 \end{bmatrix}$

8) —

A) $A^{-1} = \begin{bmatrix} 7 & -1 \\ -5 & 3 \end{bmatrix}$

B) $A^{-1} = \begin{bmatrix} -\frac{3}{16} & -\frac{1}{16} \\ -\frac{5}{16} & -\frac{7}{16} \end{bmatrix}$

C) $A^{-1} = \begin{bmatrix} \frac{7}{16} & -\frac{1}{16} \\ -\frac{5}{16} & \frac{3}{16} \end{bmatrix}$

D) $A^{-1} = \begin{bmatrix} \frac{3}{16} & \frac{1}{16} \\ \frac{5}{16} & \frac{7}{16} \end{bmatrix}$

9) $A = \begin{bmatrix} 1 & 0 & 8 \\ 1 & 2 & 3 \\ 2 & 5 & 3 \end{bmatrix}$

9) —

A) $A^{-1} = \begin{bmatrix} 9 & -40 & 16 \\ -3 & 13 & -5 \\ -1 & 5 & -2 \end{bmatrix}$

B) $A^{-1} = \begin{bmatrix} -1 & 0 & -8 \\ -1 & -2 & -3 \\ -2 & -5 & -3 \end{bmatrix}$

C) $A^{-1} = \begin{bmatrix} 1 & 1 & 2 \\ 0 & 2 & 5 \\ 8 & 3 & 3 \end{bmatrix}$

D) No solution

Solve the system using the inverse of the coefficient matrix of the equivalent matrix equation.

10) $-5x + 3y = 8$

10) —

$-2x + 4y = 20$

A) (2, 6)

B) (6, 2)

C) (-6, -2)

D) (-2, -6)

11) $-3x - y + 7z = 38$

11) —

$9x + 8y + 3z = 137$

$-4x - 7y + z = -64$

A) (6, 7, 9)

B) No solution

C) (-6, 7, 12)

D) (6, 9, 7)

12) $2x + 8y + 6z = 20$

12) —

$4x + 2y - 2z = -2$

$3x - y + z = 11$

A) (2, 1, 6)

B) (2, -1, 4)

C) No solution

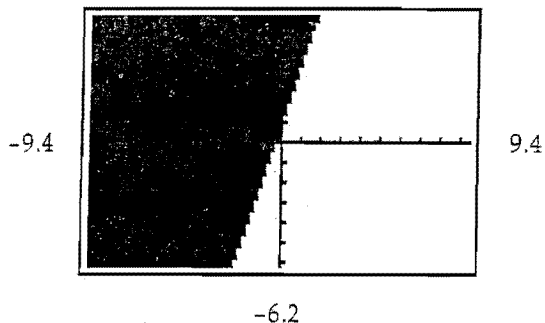
D) (-1, 2, 1)

Match the graph to the correct inequality.

13)

6.2

13) —



A) $y \leq 3x + 1$

B) $y \geq 3x + 1$

C) $y \leq -3x + 1$

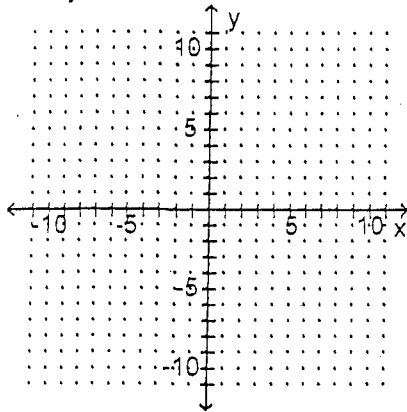
D) $y \geq -3x + 1$

Review Questions for Math 111, Part 3

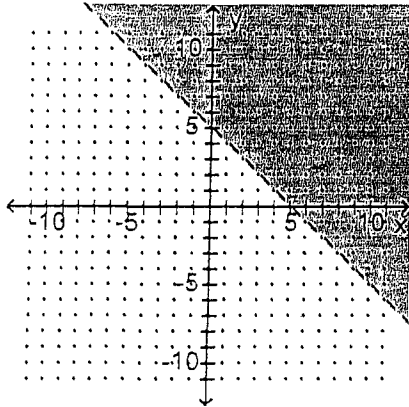
Graph the linear inequality.

14) $x - y > -5$

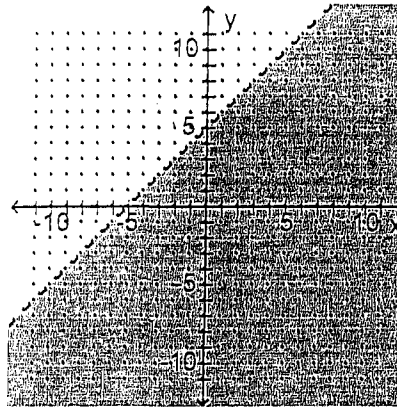
14) —



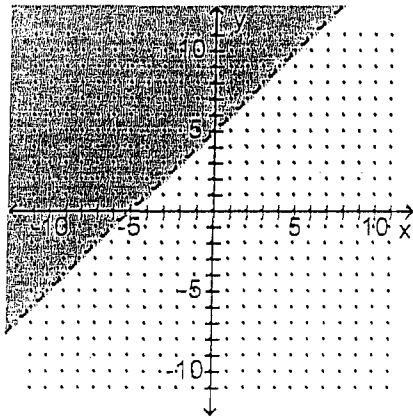
A)



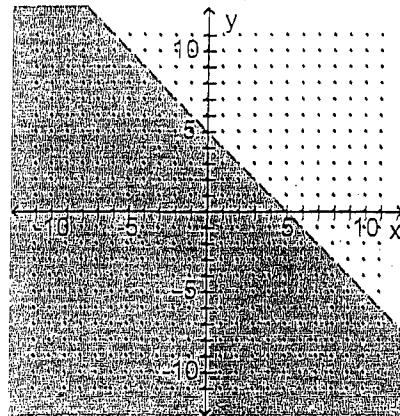
B)



C)



D)

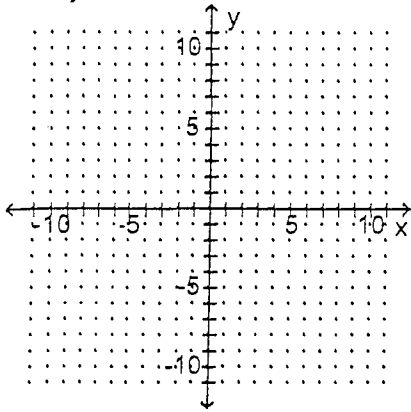


Review Questions for Math 111, Part 3

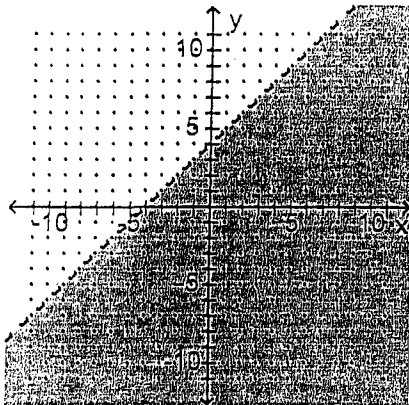
Graph the linear inequality.

15) $x - y < -4$

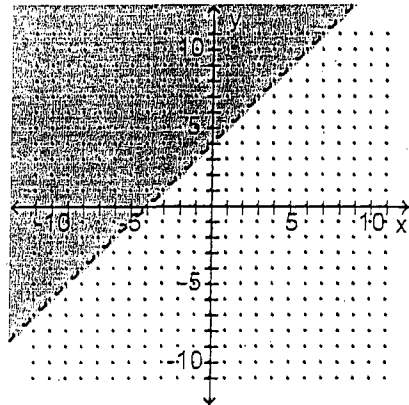
15) —



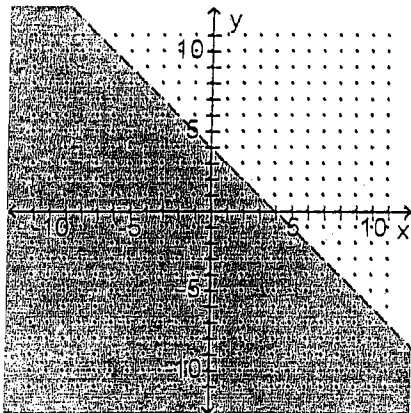
A)



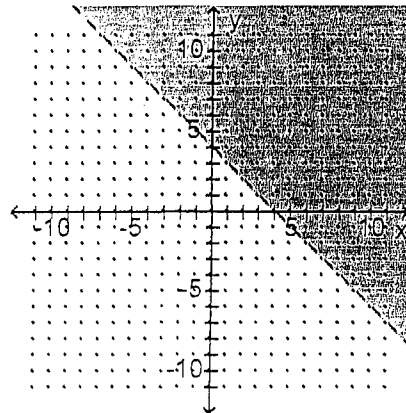
B)



C)



D)

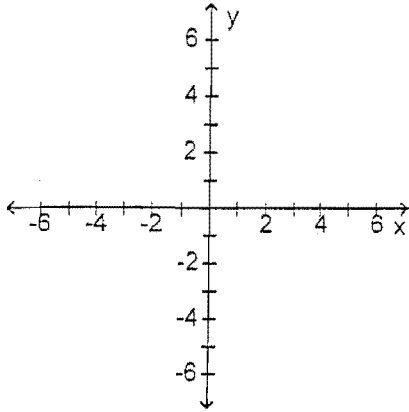


Review Questions for Math 111, Part 3

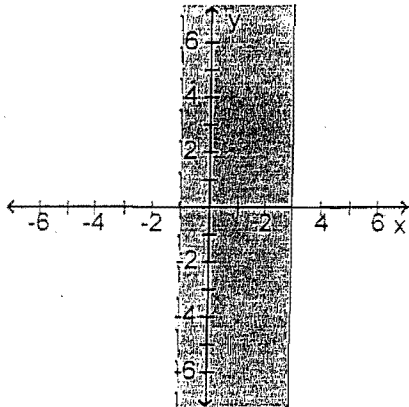
Graph the intersections or unions of each pair of linear inequalities.

16) $x \leq 3$ and $x > -1$

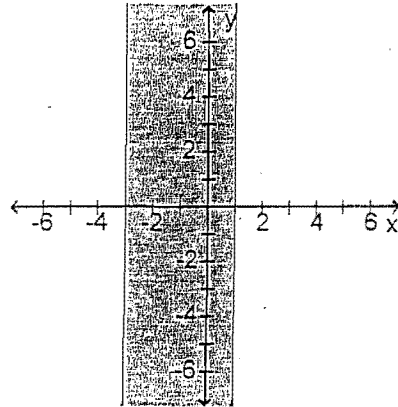
16) —



A)



B)

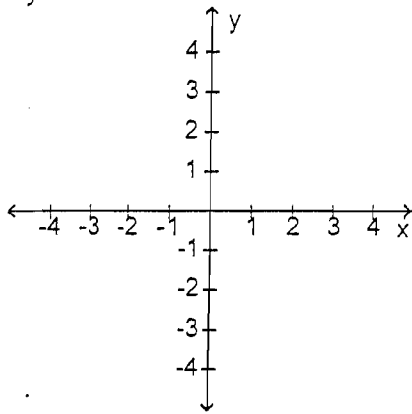


Review Questions for Math 111, Part 3

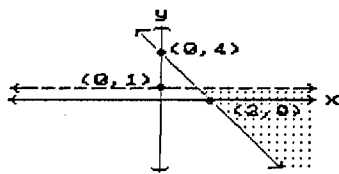
Graph the solution set of the system of inequalities.

$$\begin{aligned} 17) \quad & 2x + y \leq 4 \\ & y - 1 < 0 \end{aligned}$$

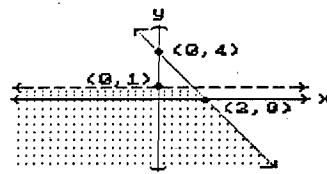
17) —



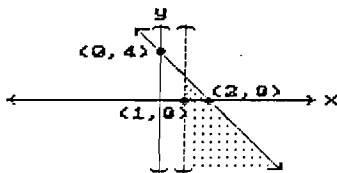
A)



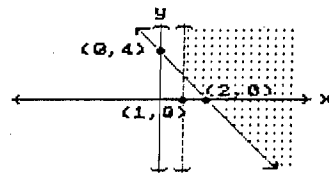
B)



C)



D)



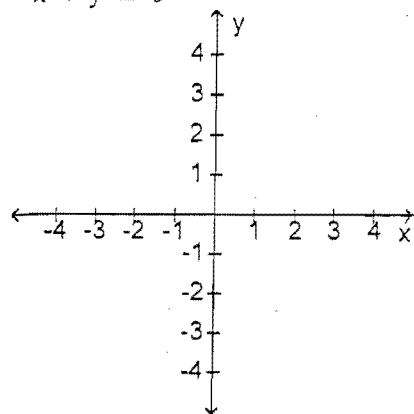
Review Questions for Math 111, Part 3

Graph the solution set of the system of inequalities.

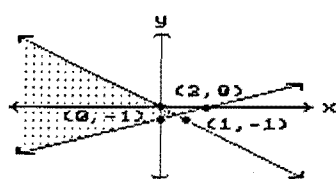
18) $x + 2y \leq 2$

$x + y \geq 0$

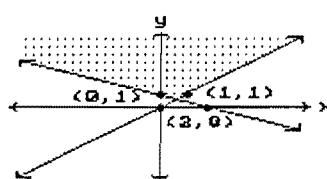
18) —



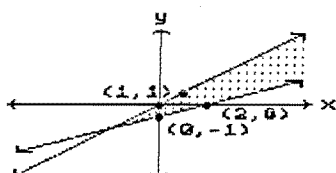
A)



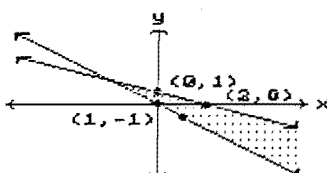
B)



C)



D)



Find the focus and directrix of the parabola.

19) $x^2 = 32y$

19) —

A) $(8, 0), y = 8$

B) $(8, 0), x = 8$

C) $(0, -8), x = -8$

D) $(0, 8), y = -8$

Find the standard form of the equation of the parabola.

20) Focus at $(0, 2)$, directrix $y = -2$

20) —

A) $y = \frac{1}{8}x^2$

B) $y^2 = 8x$

C) $y^2 = 2x$

D) $y = \frac{1}{2}x^2$

21) Focus at $(-8, 9)$, directrix $x = -18$

21) —

A) $x = \frac{1}{20}y^2 + 18y - 179$

B) $y = \frac{1}{20}x^2 + \frac{179}{20}x + \frac{179}{5}$

C) $x = \frac{1}{20}y^2 - \frac{9}{10}y - \frac{179}{20}$

D) $y = \frac{1}{20}x^2 - \frac{9}{10}x - \frac{179}{20}$

Find the focus and the directrix of the parabola.

22) $-3x^2 - 6x - y - 5 = 0$

22) —

A) $(-1, \frac{23}{-12}); x = \frac{25}{-12}$

B) $(-1, \frac{25}{-12}); y = \frac{23}{-12}$

C) $(-1, -5); x = 1$

D) $(-1, -14); x = -10$

Review Questions for Math 111, Part 3

Find the focus and the directrix of the parabola.

23) $y^2 - 4x + 2y + 5 = 0$

23) —

A) $(5, 1); y = 3$

B) $(0, 1); y = 2$

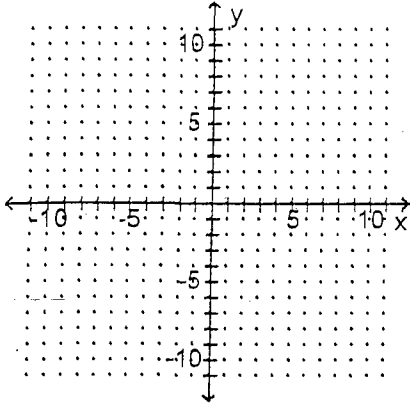
C) $(2, -1); x = 0$

D) $(\frac{5}{4}, -1); y = \frac{3}{4}$

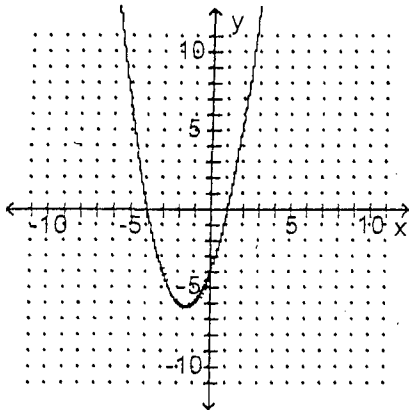
Graph.

24) $x = y^2 + 3y - 4$

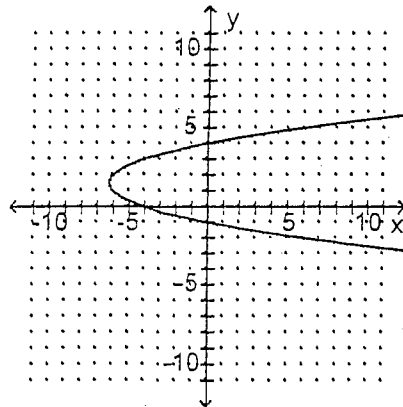
24) —



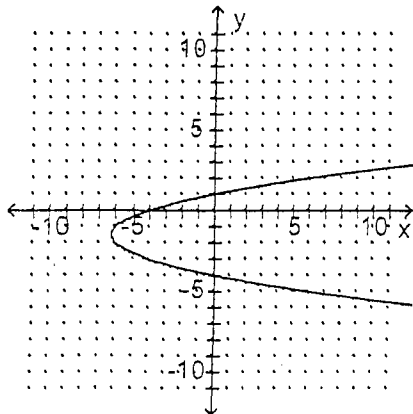
A)



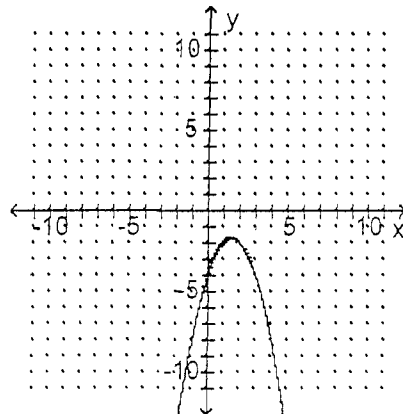
B)



C)



D)

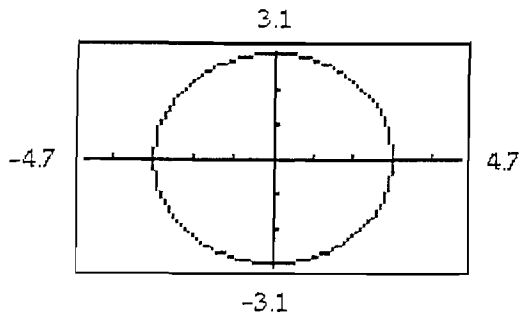


Review Questions for Math 111, Part 3

Match the given graph with its equation.

25)

25) —



A) $x^2 + y^2 = -9$

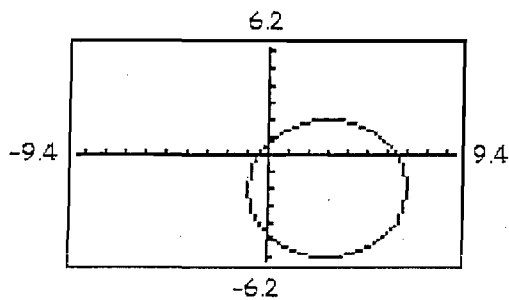
B) $x^2 + y^2 = 9$

C) $x^2 + y^2 = 1$

D) $x^2 + y^2 = 3$

26)

26) —



A) $(x - 2)^2 + (y + 3)^2 = 16$

B) $(x + 3)^2 + (y - 2)^2 = 16$

C) $(x + 2)^2 + (y - 3)^2 = 16$

D) $(x - 3)^2 + (y + 2)^2 = 16$

Find the center and the radius of the circle.

27) $(x - 2)^2 + (y - 1)^2 = 36$

27) —

A) $(1, 2), r = 6$

B) $(-2, -1), r = 36$

C) $(2, 1), r = 6$

D) $(-1, -2), r = 36$

28) $x^2 + y^2 - 10x + 8y = 40$

28) —

A) $(-5, 4), r = 81$

B) $(5, -4), r = 9$

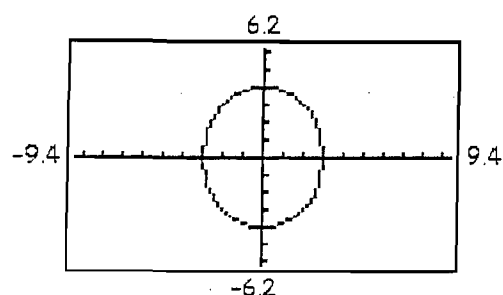
C) $(4, -5), r = 81$

D) $(-4, 5), r = 9$

Review Questions for Math 111, Part 3

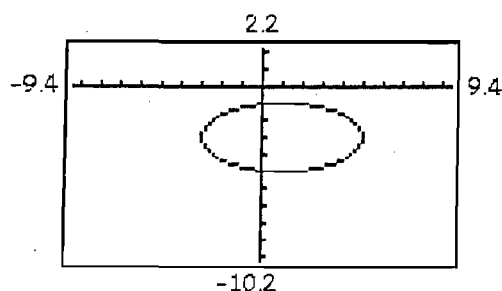
Match the given graph with its equation.

29) _____ 29) _____



- A) $16x^2 - 9y^2 = 144$ B) $9x^2 - 16y^2 = 144$ C) $9x^2 + 16y^2 = 144$ D) $16x^2 + 9y^2 = 144$

30) _____ 30) _____



- A) $\frac{(x-1)^2}{4} + \frac{(y+3)^2}{16} = 1$ B) $\frac{(x+1)^2}{16} + \frac{(y-3)^2}{4} = 1$
 C) $\frac{(x-1)^2}{16} + \frac{(y+3)^2}{4} = 1$ D) $\frac{(x+1)^2}{4} + \frac{(y-3)^2}{16} = 1$

Give the standard form of the equation of the ellipse.

31) Vertices: (0,7) and (0,-7) ; x-intercepts: (5,0) and (-5,0) _____ 31) _____

- A) $\frac{x^2}{7} + \frac{y^2}{5} = 1$ B) $\frac{x^2}{5} + \frac{y^2}{7} = 1$ C) $\frac{x^2}{49} + \frac{y^2}{25} = 1$ D) $\frac{x^2}{25} + \frac{y^2}{49} = 1$

32) Vertices: (9,0) and (-9,0);
y-intercepts: (0,√33) and (0,-√33) _____ 32) _____

- A) $\frac{x^2}{81} + \frac{y^2}{25} = 1$ B) $\frac{x^2}{33} + \frac{y^2}{25} = 1$ C) $\frac{x^2}{81} + \frac{y^2}{81} = 1$ D) $\frac{x^2}{81} + \frac{y^2}{33} = 1$

33) An ellipse with major axis from (-1,-3) to (9,-3); minor axis from (4,-7) to (4,1) _____ 33) _____

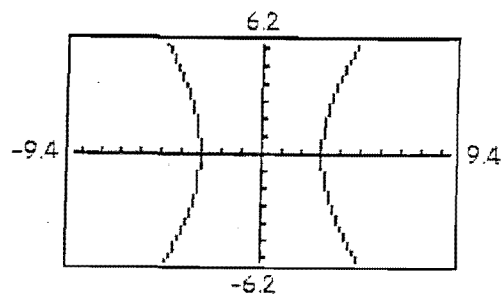
- A) $\frac{(x-4)^2}{25} + \frac{(y+3)^2}{16} = 1$ B) $\frac{(x-5)^2}{25} + \frac{(y-4)^2}{16} = 1$
 C) $\frac{(x+3)^2}{25} + \frac{(y-4)^2}{16} = 1$ D) $\frac{(x+4)^2}{25} + \frac{(y-3)^2}{16} = 1$

Review Questions for Math 111, Part 3

Match the given graph with its equation.

34)

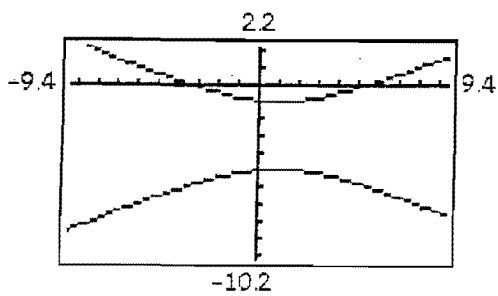
34) —



- A) $\frac{y^2}{9} - \frac{x^2}{25} = 1$ B) $\frac{x^2}{25} - \frac{y^2}{9} = 1$ C) $\frac{x^2}{9} - \frac{y^2}{25} = 1$ D) $\frac{x^2}{9} + \frac{y^2}{25} = 1$

35)

35) —



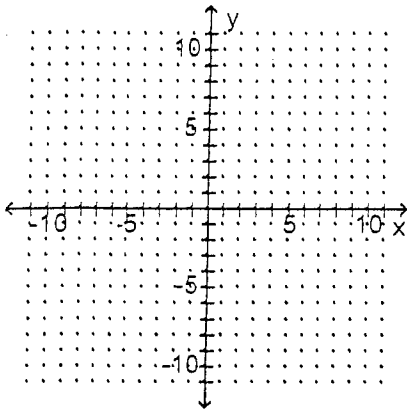
- A) $\frac{(x-1)^2}{16} - \frac{(y+3)^2}{4} = 1$ B) $\frac{(y+3)^2}{4} - \frac{(x-1)^2}{16} = 1$
 C) $\frac{(x+3)^2}{16} - \frac{(x-1)^2}{4} = 1$ D) $\frac{(x-1)^2}{4} - \frac{(y+3)^2}{16} = 1$

Review Questions for Math 111, Part 3

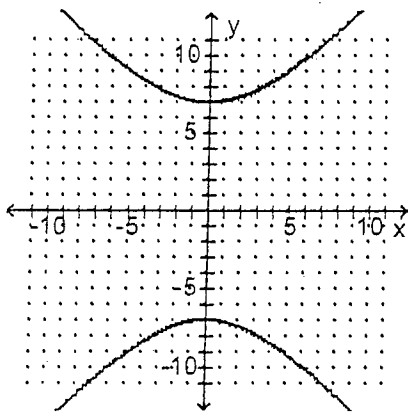
Graph.

36) $\frac{y^2}{49} - \frac{x^2}{36} = 1$

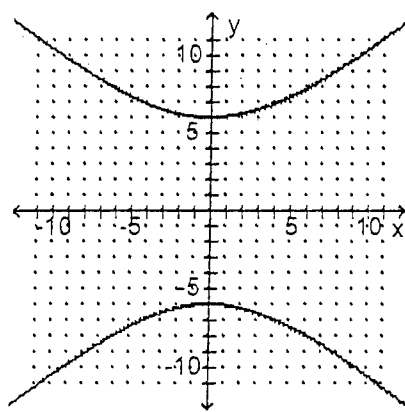
36) —



A)



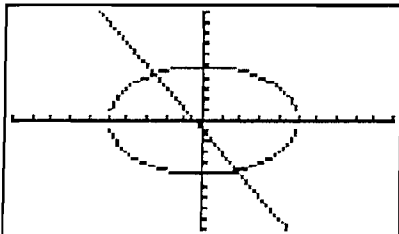
B)



Answer the question.

37)

37) —



Which system of equations corresponds to the graph above?

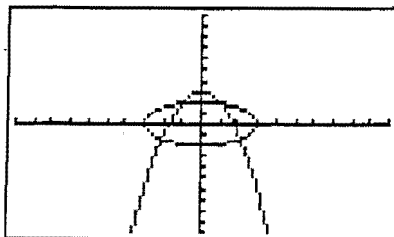
- | | | | |
|--------------------|-----------------------|-----------------------|---------------------|
| A) $y = -x^2 + 3$ | B) $y = x^2 - 6x + 6$ | C) $9y^2 - 4x^2 = 36$ | D) $x^2 + y^2 = 25$ |
| $4x^2 + 9y^2 = 36$ | $-x + y = -3$ | $x^2 + y^2 = 16$ | $2x + y = -1$ |

Review Questions for Math 111, Part 3

Answer the question.

38)

38) —



Which system of equations corresponds to the graph above?

A) $x^2 + y^2 = 25$
 $2x + y = -1$

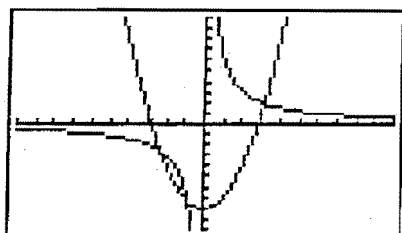
B) $y = x^2 - 6x + 6$
 $-x + y = -3$

C) $y = -x^2 + 3$
 $4x^2 + 9y^2 = 36$

D) $9y^2 - 4x^2 = 36$
 $x^2 + y^2 + 16$

39)

39) —



Which system of equations corresponds to the graph above?

A) $5x - y = 4$
 $25x^2 + 9y^2 = 225$

B) $9y^2 - 25x = 225$
 $x^2 + y^2 = 49$

C) $x = y^2 - 2$
 $y = -2x + 4$

D) $xy = 6$
 $y = x^2 - 8$

Solve.

40) $x^2 - y^2 = 39$
 $x - y = 3$

40) —

A) $(-8, 5)$

B) $(-8, -5)$

C) $(8, -5)$

D) $(8, 5)$

41) $2x^2 - 2y^2 = -64$
 $2x^2 + 2y^2 = 80$

41) —

A) $(2, 6), (-2, 6), (2, -6), (-2, -6)$

B) $(-2, -6), (-6, -2)$

C) $(2, 6), (6, 2), (-2, -6), (-6, -2)$

D) $(2, -6), (2, 6)$

42) $x^2 + y^2 = 36$
 $x^2 - y^2 = 36$

42) —

A) $(0, 6)$ and $(0, -6)$

B) $(6, 0)$ and $(-6, 0)$

C) $(0, -6)$

D) $(6, 0)$