Review for Exam 3

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the limit.

1) $\lim\limits_{x \to \infty} \dfrac{2x}{x - 16}$ 1) ______

A) $-\dfrac{1}{8}$ B) 0 C) 2 D) ∞

2) $\lim\limits_{x \to -\infty} \dfrac{x}{6x - 10}$ 2) ______

A) $-\dfrac{1}{6}$ B) $\dfrac{1}{6}$ C) 0 D) ∞

3) $\lim\limits_{x \to \infty} \dfrac{3x + 1}{16x - 7}$ 3) ______

A) $-\dfrac{1}{7}$ B) 0 C) ∞ D) $\dfrac{3}{16}$

4) $\lim\limits_{x \to \infty} \dfrac{2x + 1}{13x^2 - 7}$ 4) ______

A) $-\dfrac{1}{7}$ B) $\dfrac{2}{13}$ C) 0 D) ∞

5) $\lim\limits_{x \to \infty} \dfrac{x^2 + 7}{x^3 + 10}$ 5) ______

A) $\dfrac{7}{10}$ B) ∞ C) 0 D) 1

6) $\lim\limits_{x \to \infty} \dfrac{x^2}{x^2 - 13x - 4}$ 6) ______

A) 1 B) $-\dfrac{1}{13}$ C) $-\dfrac{1}{4}$ D) 0

7) $\lim\limits_{x \to -\infty} \dfrac{5 + 4x^2}{x - 5x^2}$ 7) ______

A) $-\dfrac{4}{5}$ B) ∞ C) $-\infty$ D) 5

8) $\lim_{x \to \infty} \dfrac{x^2 + 8x + 5}{x^3 + 5x^2 + 18}$ 8) ______

A) ∞ B) $\dfrac{5}{18}$ C) 1 D) 0

9) $\lim_{x \to -\infty} \dfrac{-13x^2 + 8x + 15}{-11x^2 + 7x + 11}$ 9) ______

A) ∞ B) $\dfrac{15}{11}$ C) $\dfrac{13}{11}$ D) 1

10) $\lim_{x \to \infty} \dfrac{13 + 7x - 4x^2}{15 + 4x - 11x^2}$ 10) ______

A) 1 B) $\dfrac{13}{15}$ C) $\dfrac{4}{11}$ D) Does not exist

11) $\lim_{x \to \infty} \dfrac{x^3 - 4}{-10x^3 - 4x^2}$ 11) ______

A) ∞ B) $-\dfrac{1}{4}$ C) $-\dfrac{1}{10}$ D) 0

12) $\lim_{x \to -\infty} \dfrac{2x^3 + 4x^2}{x - 6x^2}$ 12) ______

A) $-\dfrac{2}{3}$ B) 2 C) $-\infty$ D) ∞

13) $\lim_{y \to -\infty} \dfrac{2y^3 + 1}{9y^2 + y - 7}$ 13) ______

A) 0 B) $-\infty$ C) $\dfrac{2}{9}$ D) ∞

14) $\lim_{x \to \infty} \dfrac{(2x^2 - 7)(6x + 8)}{9x^3 + 11}$ 14) ______

A) 0 B) $\dfrac{4}{3}$ C) $\dfrac{2}{9}$ D) $\dfrac{8}{11}$

Divide numerator and denominator by the highest power of x in the denominator to find the limit.

15) $\lim_{x \to \infty} \sqrt{\dfrac{16x^2}{3 + 49x^2}}$ 15) ______

A) $\dfrac{4}{7}$ B) $\dfrac{16}{3}$ C) does not exist D) $\dfrac{16}{49}$

16) $\lim_{x \to \infty} \sqrt{\frac{49x^2}{6 + 9x^2}}$ 16) ______

A) $\frac{7}{3}$ B) $\frac{49}{9}$ C) $\frac{49}{6}$ D) does not exist

17) $\lim_{x \to \infty} \sqrt{\frac{64x^2 + x - 3}{(x - 17)(x + 1)}}$ 17) ______

A) 64 B) 0 C) 8 D) ∞

18) $\lim_{x \to \infty} \sqrt{\frac{16x^2 + x - 3}{(x - 9)(x + 1)}}$ 18) ______

A) 0 B) 16 C) ∞ D) 4

Find the limit.

19) $\lim_{t \to \infty} \frac{\sqrt{36t^2 - 216}}{t - 6}$ 19) ______

A) 216 B) 36 C) 6 D) Does not exist

Determine the limit.

20) $\lim_{x \to \infty} \left(\frac{12x^2 + 7x + 1}{\sqrt{4x^4 + x^3}} \right)$ 20) ______

A) 3 B) 4 C) 0 D) 6

Divide numerator and denominator by the highest power of x in the denominator to find the limit.

21) $\lim_{x \to \infty} \frac{5x + 2}{\sqrt{2x^2 + 1}}$ 21) ______

A) ∞ B) $\frac{5}{\sqrt{2}}$ C) 0 D) $\frac{5}{2}$

22) $\lim_{x \to \infty} \frac{10x + 7}{\sqrt{7x^2 + 1}}$ 22) ______

A) ∞ B) $\frac{10}{\sqrt{7}}$ C) $\frac{10}{7}$ D) 0

23) $\lim_{t \to \infty} \frac{\sqrt{81t^2 - 729}}{t - 9}$ 23) ______

A) does not exist B) 81 C) 9 D) 729

Find all horizontal asymptotes of the given function, if any.

24) $h(x) = \frac{2x - 3}{x - 6}$ 24) ______

A) $y = 0$
B) $y = 2$
C) $y = 6$
D) no horizontal asymptotes

25) $h(x) = 2 - \frac{3}{x}$ 25) ______

A) $y = 2$
B) $y = 3$
C) $x = 0$
D) no horizontal asymptotes

26) $g(x) = \frac{x^2 + 8x - 7}{x - 7}$ 26) ______

A) $y = 0$
B) $y = 7$
C) $y = 1$
D) no horizontal asymptotes

27) $h(x) = \frac{9x^2 - 3x - 6}{3x^2 - 4x + 3}$ 27) ______

A) $y = 0$
B) $y = \frac{3}{4}$
C) $y = 3$
D) no horizontal asymptotes

28) $h(x) = \frac{7x^4 - 9x^2 - 8}{2x^5 - 3x + 8}$ 28) ______

A) $y = \frac{7}{2}$
B) $y = 3$
C) $y = 0$
D) no horizontal asymptotes

29) $R(x) = \frac{-3x^2 + 1}{x^2 + 2x - 8}$ 29) ______

A) $y = 0$
B) $y = -4$, $y = 2$
C) $y = -3$
D) no horizontal asymptotes

30) $f(x) = \frac{16x^4 + x^2 - 4}{x - x^3}$ 30) ______

A) $y = -16$
B) no horizontal asymptotes
C) $y = 0$
D) $y = -1$, $y = 1$

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

31) $f(x) = \dfrac{28x^2 + 19x + 8}{4x + 1}$; Find the slant asymptote. 31) ______

A) $y = 7x + 8$ B) $y = 4x + 1$ C) $y = 7x + 3$ D) $y = 7x$

32) $f(x) = \dfrac{28x^2 + 27x + 7}{4x + 1}$; Find the slant asymptote. 32) ______

A) $y = 7x + 5$ B) $y = 7x + 7$ C) $y = 7x$ D) $y = 4x + 1$

33) $f(x) = \dfrac{7x^3 + 3x^2 + 9x + 3}{1 + x^2}$; Find the slant asymptote. 33) ______

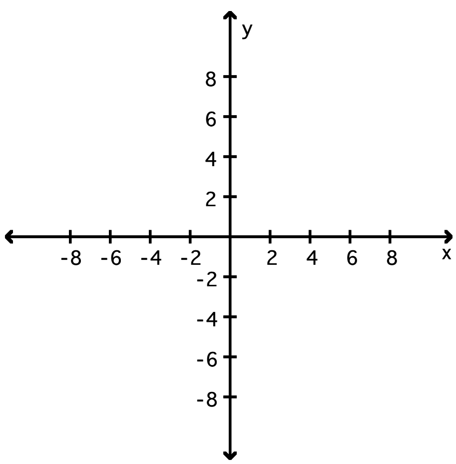
A) $y = 7x$ B) $y = 7x + 9$ C) $y = 7x + 3$ D) $y = 1 + x^2$

34) $f(x) = \dfrac{9x^3 + 4x^2 + 13x + 4}{1 + x^2}$; Find the slant asymptote. 34) ______

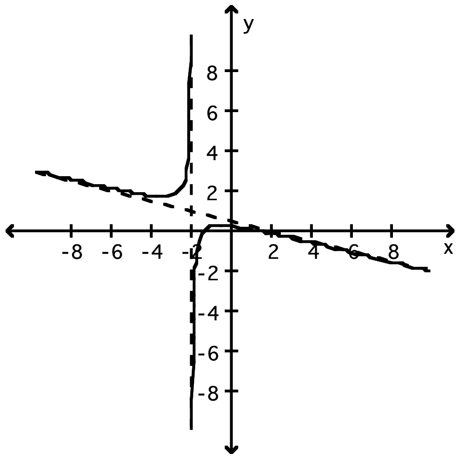
A) $y = 9x + 13$ B) $y = 1 + x^2$ C) $y = 9x$ D) $y = 9x + 4$

Graph the rational function. Include the graphs and equations of the asymptotes.

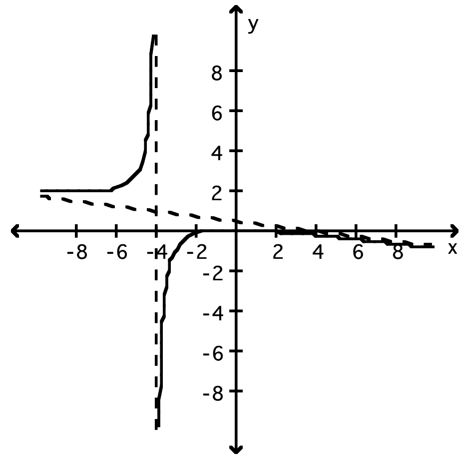
35) $y = \dfrac{2 - x^2}{2x + 4}$ 35) ______



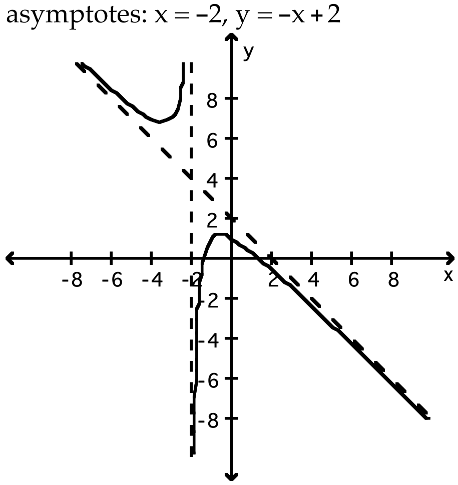
A) asymptotes: $x = -2,\ y = -\frac{1}{4}x + \frac{1}{2}$



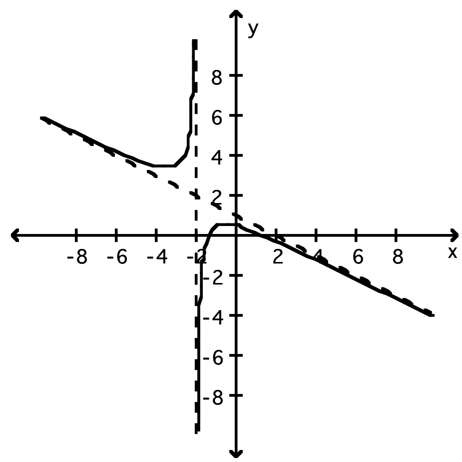
B) asymptotes: $x = -4,\ y = -\frac{1}{8}x + \frac{1}{2}$



C) asymptotes: $x = -2,\ y = -x + 2$

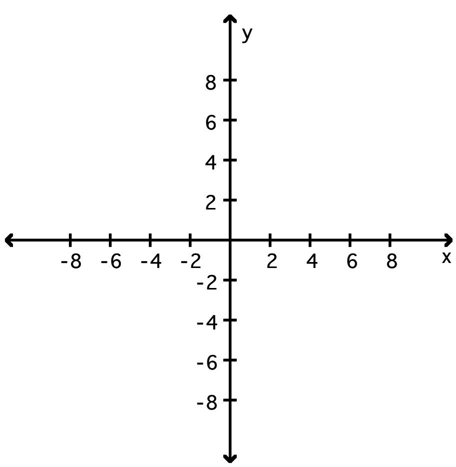


D) asymptotes: $x = -2,\ y = -\frac{1}{2}x + 1$

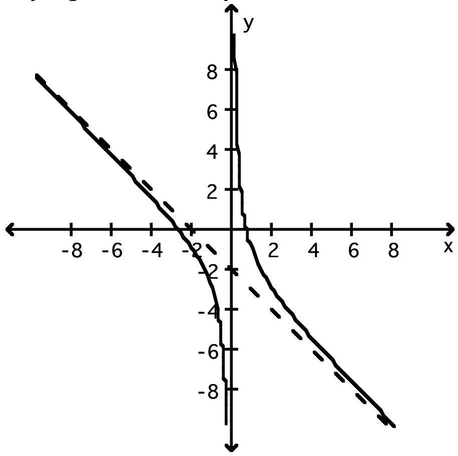


36) $y = \dfrac{2 - 2x - x^2}{x}$

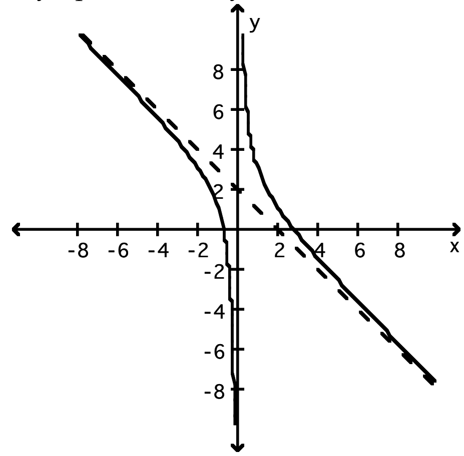
36) ______



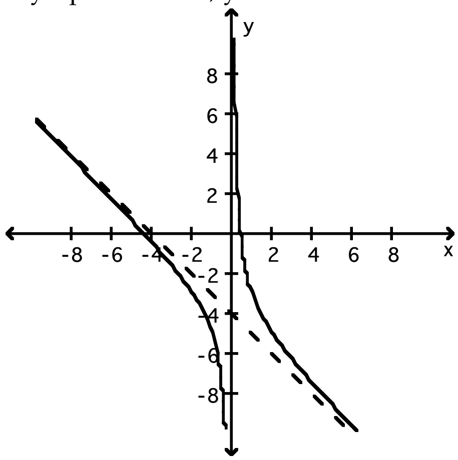
A) asymptotes: $x = 0$, $y = -x - 2$



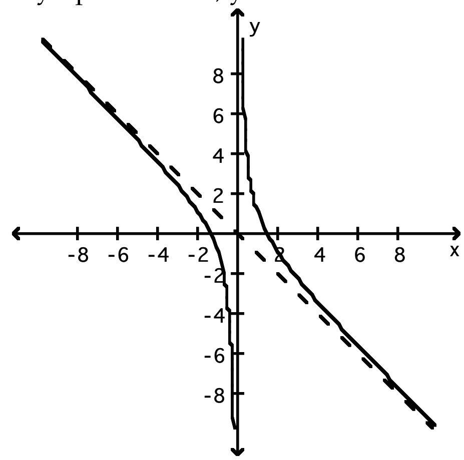
B) asymptotes: $x = 0$, $y = -x + 2$



C) asymptotes: $x = 0$, $y = -x - 4$



D) asymptotes: $x = 0$, $y = -x$



Solve the problem.

37) The velocity of a particle, in feet per second, is given by $v = t^2 - 9t + 8$, where t is the time (in seconds) for which it has traveled. Find the time at which the velocity is at a minimum. 37) ______

A) 9 sec B) 8 sec C) 4 sec D) 4.5 sec

38) The velocity of a particle, in feet per second, is given by $v = t^2 - 4t + 7$, where t is the time (in seconds) for which it has traveled. Find the time at which the velocity is at a minimum. 38) ______

A) 4 sec B) 7 sec C) 3.5 sec D) 2 sec

39) A carpenter is building a rectangular room with a fixed perimeter of 380 feet. What are the dimensions of the largest room that can be built? What is its area? 39) ______

A) 38 ft by 342ft; 12,996 ft^2
B) 95 ft by 285 ft; 27,075 ft^2
C) 190 ft by 190 ft; 36,100 ft^2
D) 95 ft by 95 ft; 9025 ft^2

40) A piece of molding 190 centimeters long is to be cut to form a rectangular picture frame. What dimensions will enclose the largest area? Round to the nearest hundredth, if necessary. 40) ______

A) 38 cm by 38 cm
B) 13.78 cm by 47.5 cm
C) 13.78 cm by 13.78 cm
D) 47.5 cm by 47.5 cm

41) A rectangular field is to be enclosed on four sides with a fence. Fencing costs \$3 per foot for two opposite sides, and \$2 per foot for the other two sides. Find the dimensions of the field of area 770 ft^2 that would be the cheapest to enclose. 41) ______

A) 18.5 ft @ \$3 by 41.6 ft @ \$2
B) 22.7 ft @ \$3 by 34 ft @ \$2
C) 41.6 ft @ \$3 by 18.5 ft @ \$2
D) 34 ft @ \$3 by 22.7 ft @ \$2

42) A rectangular field is to be enclosed on four sides with a fence. Fencing costs \$6 per foot for two opposite sides, and \$7 per foot for the other two sides. Find the dimensions of the field of area 630 square feet that would be the cheapest to enclose. 42) ______

A) 27.1 ft at \$6 by 23.2 ft at \$7
B) 23.2 ft at \$6 by 27.1 ft at \$7
C) 29.3 ft at \$6 by 21.5 ft at \$7
D) 21.5 ft at \$6 by 29.3 ft at \$7

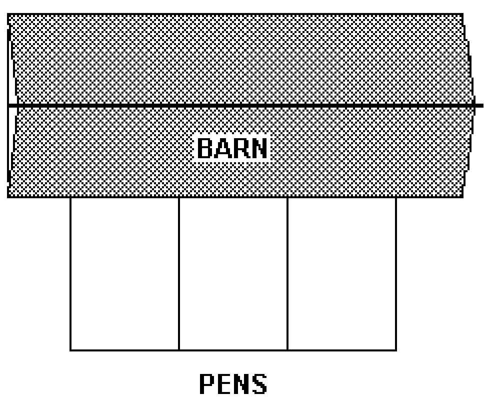
43) From a thin piece of cardboard 20 inches by 20 inches, square corners are cut out so that the sides can be folded up to make a box. What dimensions will yield a box of maximum volume? What is the maximum volume? Round to the nearest tenth, if necessary. 43) ______

A) 10 in. by 10 in. by 5 in.; 500 $in.^3$
B) 13.3 in. by 13.3 in. by 3.3 in.; 592.6 $in.^3$
C) 13.3 in. by 13.3 in. by 6.7 in.; 1185.2 $in.^3$
D) 6.7 in. by 6.7 in. by 6.7 in.; 296.3 $in.^3$

44) From a thin piece of cardboard 50 inches by 50 inches, square corners are cut out so that the sides can be folded up to make a box. What dimensions will yield a box of maximum volume? What is the maximum volume? Round to the nearest tenth, if necessary. 44) ______

A) 16.7 in. by 16.7 in. by 16.7 in.; 4629.6 $in.^3$
B) 25 in. by 25 in. by 12.5 in.; 7812.5 $in.^3$
C) 33.3 in. by 33.3 in. by 8.3 in.; 9259.3 $in.^3$
D) 33.3 in. by 33.3 in. by 16.7 in.; 18,518.5 $in.^3$

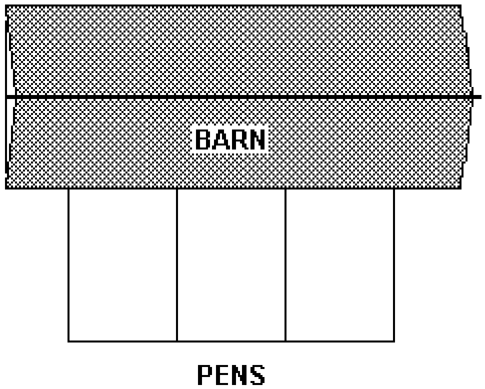
45) A farmer decides to make three identical pens with 104 feet of fence. The pens will be next to each other sharing a fence and will be up against a barn. The barn side needs no fence. 45) ______



What dimensions for the total enclosure (rectangle including all pens) will make the area as large as possible?

A) 26 ft by 26 ft
B) 13 ft by 13 ft
C) 13 ft by 52 ft
D) 17.33 ft by 86.67 ft

46) A farmer decides to make three identical pens with 112 feet of fence. The pens will be next to each other sharing a fence and will be up against a barn. The barn side needs no fence. 46) ______



What dimensions for the total enclosure (rectangle including all pens) will make the area as large as possible?

A) 14 ft by 14 ft
B) 18.67 ft by 93.33 ft
C) 28 ft by 28 ft
D) 14 ft by 56 ft

47) Find the number of units that must be produced and sold in order to yield the maximum profit, given the following equations for revenue and cost: 47) ______

$R(x) = 50x - 0.5x^2$

$C(x) = 9x + 10.$

A) 41 units
B) 42 units
C) 51 units
D) 59 units

48) Find the number of units that must be produced and sold in order to yield the maximum profit, given the following equations for revenue and cost: 48) ______

$R(x) = 3x$

$C(x) = 0.01x^2 + 1.3x + 50.$

A) 170 units
B) 215 units
C) 85 units
D) 430 units

49) The price P of a certain computer system decreases immediately after its introduction and then increases. If the price P is estimated by the formula $P = 130t^2 - 2000t + 6300$, where t is the time in months from its introduction, find the time until the minimum price is reached. 49) ______

A) 30.8 months
B) 15.4 months
C) 10 months
D) 7.7 months

50) The price P of a certain computer system decreases immediately after its introduction and then increases. If the price P is estimated by the formula $P = 120t^2 - 2400t + 7000$, where t is the time in months from its introduction, find the time until the minimum price is reached. 50) ______

A) 10 months
B) 12 months
C) 20 months
D) 40 months

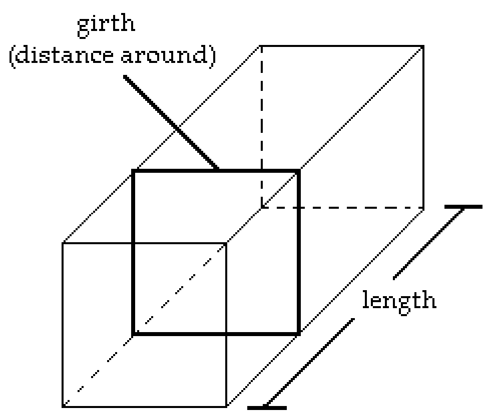
51) The cost of a computer system increases with increased processor speeds. The cost C of a system as a function of processor speed is estimated as $C = 6S^2 - 2S + 1200$, where S is the processor speed in MHz. Find the processor speed for which cost is at a minimum. 51) ______

A) 0.2 MHz
B) 1.3 MHz
C) 0.1 MHz
D) 3.3 MHz

52) The cost of a computer system increases with increased processor speeds. The cost C of a system as a function of processor speed is estimated as $C = 11S^2 - 5S + 1000$, where S is the processor speed in MHz. Find the processor speed for which cost is at a minimum. 52) ______

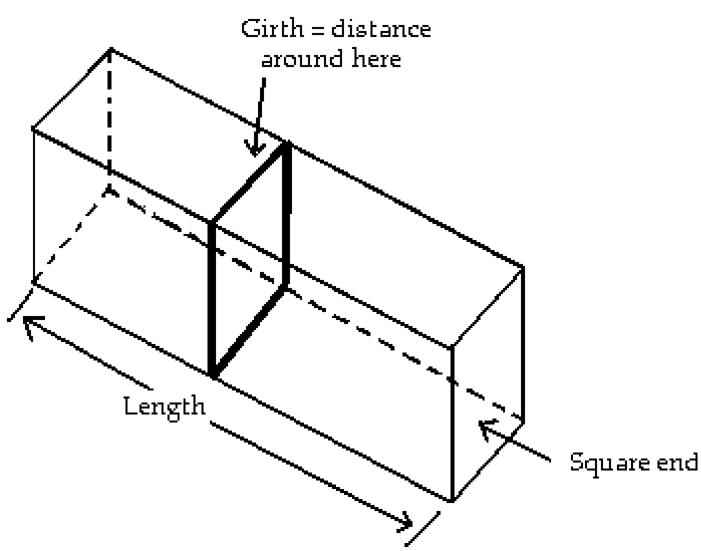
A) 4.5 MHz B) 0.2 MHz C) 1.8 MHz D) 0.3 MHz

53) A private shipping company will accept a box for domestic shipment only if the sum of its length and girth (distance around) does not exceed 120 inches. What dimensions will give a box with a square end the largest possible volume? 53) ______



A) 20 in. by 20 in. by 40 in. B) 40 in. by 40 in. by 40 in.
C) 20 in. by 20 in. by 100 in. D) 20 in. by 40 in. by 40 in.

54) A private shipping company will accept a box for domestic shipment only if the sum of its length and girth (distance around) does not exceed 90 in. What dimensions will give a box with a square end the largest possible volume? 54) ______



A) 15 in. × 30 in. × 30 in. B) 30 in. × 30 in. × 30 in.
C) 15 in. × 15 in. × 75 in. D) 15 in. × 15 in. × 30 in.

55) If the price charged for a candy bar is $p(x)$ cents, then x thousand candy bars will be sold in a certain city, where $p(x) = 122 - \frac{x}{16}$. How many candy bars must be sold to maximize revenue? 55) ______

A) 976 candy bars
B) 1952 thousand candy bars
C) 1952 candy bars
D) 976 thousand candy bars

56) If the price charged for a candy bar is $p(x)$ cents, then x thousand candy bars will be sold in a certain city, where $p(x) = 8 - \frac{x}{20}$. How many candy bars must be sold to maximize revenue? 56) ______

A) 160 thousand candy bars
B) 160 candy bars
C) 80 thousand candy bars
D) 80 candy bars

57) The altitude h, in feet, of a jet that goes into a dive and then again turns upward is given by $h = 12t^3 - 198t^2 + 9500$, where t is the time, in seconds, of the dive and turn. What is the altitude of the jet when it turns up out of the dive? 57) ______

A) 1700 ft
B) 1660 ft
C) 1514 ft
D) 1588 ft

58) A company wishes to manufacture a box with a volume of 44 cubic feet that is open on top and is twice as long as it is wide. Find the width of the box that can be produced using the minimum amount of material. Round to the nearest tenth, if necessary. 58) ______

A) 3.7 ft
B) 6.8 ft
C) 3.4 ft
D) 7.4 ft

Use l'Hopital's Rule to evaluate the limit.

59) $\lim_{x \to 2} \frac{x^2 - 4}{x - 2}$ 59) ______

A) 4
B) −4
C) 2
D) −2

60) $\lim_{x \to 3} \frac{x^2 - 4x + 3}{x - 3}$ 60) ______

A) 10
B) −1
C) 2
D) 6

61) $\lim_{x \to 1} \frac{x^3 - 5x^2 + 4}{x - 1}$ 61) ______

A) 13
B) 8
C) 10
D) −7

62) $\lim_{x \to 0} \frac{\cos 3x - 1}{x^2}$ 62) ______

A) $-\frac{9}{2}$
B) $\frac{9}{2}$
C) $\frac{3}{2}$
D) 0

63) $\lim\limits_{x \to \pi/3} \dfrac{\cos x - \frac{1}{2}}{x - \frac{\pi}{3}}$ 63) ______

A) $-\frac{\sqrt{3}}{2}$ B) $\frac{\sqrt{3}}{2}$ C) $-\sqrt{3}$ D) $\frac{\sqrt{2}}{2}$

64) $\lim\limits_{x \to 0} \dfrac{x}{\sin x}$ 64) ______

A) -1 B) 1 C) $\frac{1}{2}$ D) 0

65) $\lim\limits_{x \to 0} \dfrac{\sin 5x}{\sin x}$ 65) ______

A) 0 B) 5 C) -5 D) 1

66) $\lim\limits_{\theta \to 0} \dfrac{6 - 6\cos\theta}{\sin 7\theta}$ 66) ______

A) 1 B) ∞ C) $\frac{6}{7}$ D) 0

67) $\lim\limits_{x \to 0} \dfrac{\sin 5x}{\tan 4x}$ 67) ______

A) $\frac{4}{5}$ B) $-\frac{5}{4}$ C) 0 D) $\frac{5}{4}$

68) $\lim\limits_{\theta \to 0} \dfrac{\sin \theta^7}{\theta}$ 68) ______

A) $-\infty$ B) 0 C) ∞ D) 1

69) $\lim\limits_{x \to 0} \dfrac{\sin 5x}{9x}$ 69) ______

A) 1 B) $\frac{5}{9}$ C) 0 D) $\frac{1}{9}$

70) $\lim\limits_{x \to \infty} \dfrac{x^2 - 4x + 11}{x^3 + 7x^2 + 12}$ 70) ______

A) ∞ B) 0 C) -1 D) 1

71) $\lim\limits_{x \to \infty} \dfrac{15x^2 - 7x + 4}{6x^2 + 4x + 17}$ 71) ______

A) $\dfrac{2}{5}$ B) $-\dfrac{5}{2}$ C) $\dfrac{5}{2}$ D) 1

Use l'Hôpital's rule to find the limit.

72) $\lim\limits_{x \to \infty} \dfrac{8x^2 - 5x + 1}{3x^2 + 3x - 8}$ 72) ______

A) 8 B) 1 C) $\dfrac{8}{3}$ D) ∞

Use l'Hopital's Rule to evaluate the limit.

73) $\lim\limits_{x \to -\infty} \dfrac{14 + 4x - 7x^2}{15 + 6x - 12x^2}$ 73) ______

A) $\dfrac{14}{15}$ B) $\dfrac{7}{12}$ C) ∞ D) 1

74) $\lim\limits_{x \to \infty} \dfrac{4x + 6}{9x^2 + 6x - 5}$ 74) ______

A) 1 B) 0 C) $\dfrac{2}{9}$ D) $\dfrac{4}{9}$

75) $\lim\limits_{x \to \infty} x \sin \dfrac{4}{x}$ 75) ______

A) 4 B) 1 C) 0 D) $\dfrac{1}{4}$

76) $\lim\limits_{x \to \infty} \left(\sqrt{x^2 + 6x} - x\right)$ 76) ______

A) 3 B) 0 C) -3 D) 6

Use l'Hôpital's rule to find the limit.

77) $\lim\limits_{x \to \infty} \left(\sqrt{x^2 + 7x} - x\right)$ 77) ______

A) $-\dfrac{7}{2}$ B) $\dfrac{7}{2}$ C) 7 D) 0

Use l'Hopital's Rule to evaluate the limit.

78) $\lim\limits_{x \to \infty} \dfrac{3x^2 - 5x + 1}{9x^2 + 3x - 8}$ 78) ______

A) 3 B) ∞ C) 1 D) $\dfrac{1}{3}$

Find the limit.

79) $\lim\limits_{x \to 0^+} x^6 \ln x$ 79) ______

A) 0 B) 6 C) 1 D) -1

80) $\lim\limits_{x \to 0^+} x^8 \ln x$ 80) ______

A) -1 B) 0 C) 1 D) 8

81) $\lim\limits_{x \to 0^+} 4x \csc x$ 81) ______

A) 4 B) ∞ C) 0 D) 1

82) $\lim\limits_{x \to 0^+} 16x \csc x$ 82) ______

A) ∞ B) 0 C) 16 D) 1

For the given function f and initial approximation x_0, use Newton's method to approximate a root of f. Stop calculating approximations when two successive approximations agree to five digits to the right of the decimal point after rounding. Show your work by making a table.

83) $f(x) = x^2 - 4 \cos x; x_0 = -3$ 83) ______

A) $x \approx -2.89037$

n	x_n
0	-3
1	-0.61569
2	2.06013
3	-8.32541
4	-2.89037
5	-2.89037

B) $x \approx -1.20154$

n	x_n
0	-3
1	-1.02574
2	-1.21246
3	-1.20157
4	-1.20154
5	-1.20154

C) $x \approx -1.20234$

n	x_n
0	-3
1	-0.25671
2	-2.74390
3	-1.14992
4	-1.20234
5	-1.20234

D) $x \approx 1.15922$

n	x_n
0	-3
1	-2.49348
2	-1.70660
3	0.42900
4	1.15922
5	1.15922

84) $f(x) = x^2 - 3\sqrt{x} - 1; x_0 = 4$ 84) ______

A) $x \approx 2.37271$

n	x_n
0	4
1	2.83871
2	2.46631
3	2.38583
4	2.37271
5	2.37271

B) $x \approx 2.37233$

n	x_n
0	4
1	2.84800
2	2.46755
3	2.38482
4	2.37233
5	2.37233

C) $x \approx 2.40192$

n	x_n
0	4
1	2.20000
2	2.48031
3	2.31588
4	2.40192
5	2.40192

D) $x \approx 2.37041$

n	x_n
0	4
1	2.75862
2	2.40595
3	2.37077
4	2.37041
5	2.37041

Use a calculator to compute the first 10 iterations of Newton's method when applied to the function with the given initial approximation. Make a table for the values. Round to six decimal places.

85) $f(x) = x^3 + x - 9; x_0 = 1$ 85) ______

A)

k	x_k
0	1.000000
1	2.250000
2	2.135884
3	2.939793
4	2.920357
5	2.920105
6	2.920105
7	2.920105
8	2.920105
9	2.920105
10	2.920105

B)

k	x_k
0	1.000000
1	2.750000
2	2.006982
3	1.999364
4	1.999936
5	1.999994
6	1.999999
7	1.999999
8	1.999999
9	1.999999
10	1.999999

C)

k	x_k
0	1.000000
1	2.750000
2	2.135884
3	1.939793
4	1.920357
5	1.920175
6	1.920175
7	1.920175
8	1.920175
9	1.920175
10	1.920175

D)

k	x_k
0	1.000000
1	2.500000
2	2.149632
3	1.987412
4	1.883214
5	1.875632
6	1.875632
7	1.875632
8	1.875632
9	1.875632
10	1.875632

86) $f(x) = 3x - \cos x; x_0 = 1$ 86) ______

A)

k	x_k
0	1.000000
1	0.469821
2	0.421897
3	0.396478
4	0.374126
5	0.355412
6	0.355411
7	0.355411
8	0.355411
9	0.355411
10	0.355411

B)

k	x_k
0	1.000000
1	1.559699
2	1.517112
3	1.516751
4	1.516751
5	1.516751
6	1.516751
7	1.516751
8	1.516751
9	1.516751
10	1.516751

C)

k	x_k
0	1.000000
1	0.559699
2	0.517112
3	0.516751
4	0.516751
5	0.516751
6	0.516751
7	0.516751
8	0.516751
9	0.516751
10	0.516751

D)

k	x_k
0	1.000000
1	0.359699
2	0.317010
3	0.316751
4	0.316751
5	0.316751
6	0.316751
7	0.316751
8	0.316751
9	0.316751
10	0.316751

87) $f(x) = 1 - \ln(x + 8); x_0 = -6$ 87) ______

A)

k	x_k
0	−6.000000
1	−5.963274
2	−5.941212
3	−5.896325
4	−5.896456
5	−5.896477
6	−5.896478
7	−5.896478
8	−5.896478
9	−5.896478
10	−5.896478

B)

k	x_k
0	−6.000000
1	−5.386294
2	−5.283756
3	−5.281719
4	−5.281718
5	−5.281718
6	−5.281718
7	−5.281718
8	−5.281718
9	−5.281718
10	−5.281718

C)

k	x_k
0	−6.000000
1	−6.886294
2	−6.783756
3	−6.781719
4	−6.781718
5	−6.781718
6	−6.781718
7	−6.781718
8	−6.781718
9	−6.781718
10	−6.781718

D)

k	x_k
0	−6.000000
1	−5.963258
2	−5.941253
3	−5.896325
4	−5.896322
5	−5.896322
6	−5.896322
7	−5.896322
8	−5.896322
9	−5.896322
10	−5.896322

88) $f(x) = e^x + 2x + 4$; $x_0 = 0$ 88) ______

A)

k	x_k
0	0.000000
1	−1.666667
2	−2.057526
3	−2.063503
4	−2.063504
5	−2.063504
6	−2.063504
7	−2.063504
8	−2.063504
9	−2.063504
10	−2.063504

B)

k	x_k
0	0.000000
1	−2.000000
2	−2.361689
3	−2.369454
4	−2.369455
5	−2.369455
6	−2.369455
7	−2.369455
8	−2.369455
9	−2.369455
10	−2.369455

C)

k	x_k
0	0.000000
1	−2.147125
2	−2.398741
3	−2.539566
4	−2.539604
5	−2.539604
6	−2.539604
7	−2.539604
8	−2.539604
9	−2.539604
10	−2.539604

D)

k	x_k
0	0.000000
1	−2.000000
2	−2.361689
3	−2.369454
4	−2.369566
5	−2.369566
6	−2.369566
7	−2.369566
8	−2.369566
9	−2.369566
10	−2.369566

Answer Key
Testname: REVIEW FOR EXAM 3

1) C
2) B
3) D
4) C
5) C
6) A
7) A
8) D
9) C
10) C
11) C
12) D
13) B
14) B
15) A
16) A
17) C
18) D
19) C
20) D
21) B
22) B
23) C
24) B
25) A
26) D
27) C
28) C
29) C
30) B
31) C
32) A
33) C
34) D
35) D
36) A
37) D
38) D
39) D
40) D
41) B
42) A
43) B
44) C
45) C
46) D
47) A
48) C
49) D

50) A
51) A
52) B
53) A
54) D
55) D
56) C
57) C
58) C
59) A
60) C
61) D
62) A
63) A
64) B
65) B
66) D
67) D
68) B
69) B
70) B
71) C
72) C
73) B
74) B
75) A
76) A
77) B
78) D
79) A
80) B
81) A
82) C
83) B
84) D
85) C
86) D
87) B
88) A