Algebra 3 Flex Credit Exam Review

Overview Of The Exam

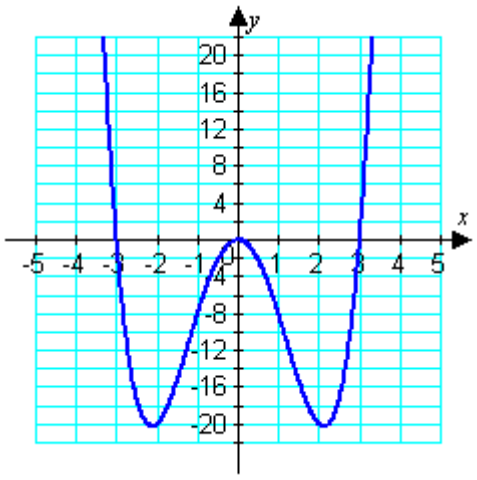
- The exam covers chapters 1.1 – 1.8, 2.1 – 2.7, 3.1 – 3.5, 4.1 – 4.3, 5.1 – 5.5, 6.1 – 6.4, 6.7, 8.1, 8.2, 9.1 – 9.3, 10.1 – 10.3, 10.5 from our textbook.

Topics On The Test

- **Chapter 1 – Equations, Inequalities, and Mathematical Modeling**
- **Chapter 2 – Functions and Their Graphs**
- **Chapter 3 – Polynomial Functions**
- **Chapter 4 – Rational Funcions and Conics**
- **Chapter 5 – Exponential and Logarithmic Functions**
- **Chapter 6 – Trigonometry**
- **Chapter 8 – Additional Topics in Trig**
- **Chapter 9 – Systems of Equations and Inequalities**
- **Chapter 10 – Matrices**

Algebra 3 Flex Credit Exam Review

1. Find the x- and y-intercepts of the graph of the equation $y = x^4 - 9x^2$.



A) x-intercepts: $(-3,0), (0,0), (3,0)$; y-intercept: $(0,0)$

B) x-intercepts: $(0,-3), (0,0), (0,3)$; y-intercept: $(0,0)$

C) x-intercepts: $(-3,0), (0,0), (3,0)$; y-intercepts: none

D) x-intercepts: $(0,-3), (0,3)$; y-intercept: $(0,0)$

E) x-intercepts: $(-3,0), (3,0)$; y-intercept: $(0,0)$

2. Write the standard form of the equation of the circle whose radius is 7 and whose center is the point $(8,-1)$.

A) $(x+1)^2 + (y-8)^2 = 7$

B) $(x-8)^2 + (y+1)^2 = 49$

C) $(x-8)^2 + (y+1)^2 = 7$

D) $(x+8)^2 + (y-1)^2 = 49$

E) $(x+1)^2 + (y-8)^2 = 49$

3. The ordered pair $(2,7)$ is a solution point for which equation below?

A) $y = \frac{1}{2}x^3 + 4x^2$

B) $y = \frac{x^2 + 6x - 2}{x}$

C) $y = x^2 + 4x - 12$

D) $y = 2 - |x - 2|$

E) $y = \frac{\sqrt{x+6}}{2}$

4. Find the x- and y-intercepts of the graph of the equation $-\frac{4x}{5} + 6 - 9y = 0$.

A) x-intercept: $\left(-\frac{5}{2}, 0\right)$; y-intercept: $\left(0, -\frac{15}{2}\right)$

B) x-intercept: $\left(\frac{15}{2}, 0\right)$; y-intercept: $\left(0, \frac{2}{3}\right)$

C) x-intercept: $\left(\frac{24}{5}, 0\right)$; y-intercept: $\left(0, \frac{4}{11}\right)$

D) x-intercept: $\left(-\frac{15}{2}, 0\right)$; y-intercept: $\left(0, -\frac{2}{3}\right)$

E) x-intercept: $\left(-\frac{24}{5}, 0\right)$; y-intercept: $\left(0, -\frac{5}{2}\right)$

5. Determine which of the following values of x is a solution to the equation $5 + \frac{1}{x+4} = 6$.

A) $x = 5$

B) $x = -4$

C) $x = -3$

D) $x = 3$

E) $x = -\frac{3}{5}$

6. Solve: $-9(x-9)=2(2-x)-2$

A) $x=\frac{79}{8}$

B) $x=\frac{79}{7}$

C) $x=-\frac{83}{11}$

D) $x=-\frac{11}{8}$

E) $x=-\frac{83}{7}$

7. Write a verbal description of the algebraic expression $\frac{-7(x+3)}{5}$ without using the variable.

A) 3 less than the product of -7 and some number, divided by 5.

B) The quotient of -7 and 5, times the sum of a number and 3.

C) 3 more than the product of -7 and some number, divided by 5.

D) 5 less than the product of -7 and the sum of a number and 3.

E) The quotient of -7 and 5, divided by the sum of a number and 3.

8. Write $x(x+7)=-5x^2-1$ in general form.

A) $-6x^2+7x+1=0$

B) $-6x^2-8=0$

C) $-4x^2+7x-1=0$

D) $-4x^2-7x+1=0$

E) $-6x^2-7x-1=0$

9. Simplify $\frac{-4-i}{3i}$ and write the answer in standard form.

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

B) $-\frac{4}{3}-\frac{i}{3}$

C) $\frac{4}{3}-\frac{i}{3}$

D) $\frac{1}{3}+\frac{4i}{3}$

E) $-\frac{1}{3}+\frac{4i}{3}$

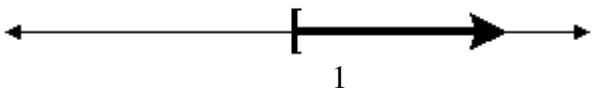
10. Use the quadratic formula to solve $x^2 - 6x + 13 = 0$.
    A) $x = 3 \pm 2i$
    B) $x = 5 \pm 2i$
    C) $x = -3 \pm 2i$
    D) $x = 1 \pm 2i$
    E) $x = -1 \pm 2i$

11. Find the x-intercepts of the graph of the equation $y = |-3x + 3| - 2$.
    A) $\left(\frac{1}{3}, 0\right), \quad \left(\frac{5}{3}, 0\right)$
    B) $\left(-\frac{5}{3}, 0\right), \quad \left(\frac{5}{3}, 0\right)$
    C) $\left(\frac{1}{3}, 0\right), \quad \left(-\frac{5}{3}, 0\right)$
    D) $\left(-\frac{1}{3}, 0\right), \quad \left(-\frac{5}{3}, 0\right)$
    E) $\left(\frac{1}{3}, 0\right), \quad \left(-\frac{1}{3}, 0\right)$

12. Find all solutions of $\sqrt{x} - \sqrt{x - 11} = 1$.
    A) $x = 36$
    B) $x = 6$
    C) $x = -6$
    D) $x = 12$
    E) $x = \sqrt{6}$

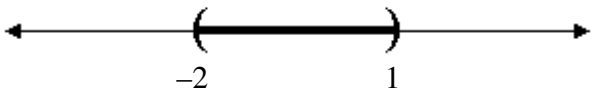
13. Match the inequality $-2 \le x \le 1$ with its graph.

A)



B)

C)



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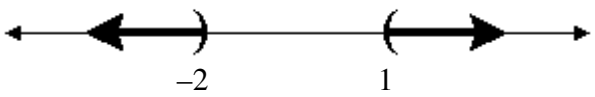

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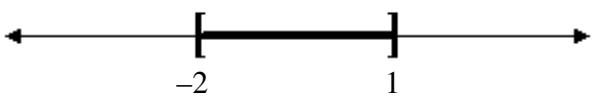
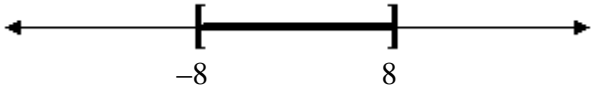
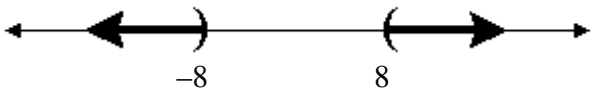


14. Match the inequality $|x| \le 8$ with its graph.

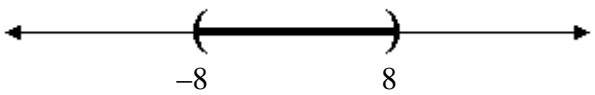
A)



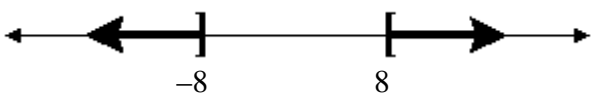
B)



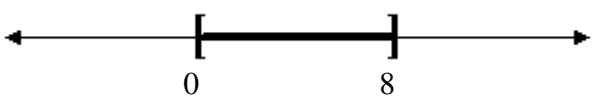
C)



D)



E)



15. Find the interval(s) on the real number line for which the radicand of $\sqrt{2-4x}$ is nonnegative.

A) $\left(-\infty, \frac{1}{2}\right)$

B) $\left(-\infty, \frac{1}{2}\right]$

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

D) $\left[\frac{1}{2}, \infty\right)$

E) $\left(\frac{1}{2}, \infty\right)$

16. Identify the solution set of $4(3-x) \geq x-5$.

A) $\left(-\infty, \frac{17}{5}\right]$

B) $\left[\frac{17}{5}, \infty\right)$

C) $\left(-\infty, \frac{17}{2}\right]$

D) no solution

E) $\left(-\infty, \frac{7}{2}\right]$

17. Solve: $\frac{5x-4}{x-4} \geq 2$

A) $\left[-\frac{8}{3}, 4\right) \cup (4, \infty)$

B) $\left(-\infty, -\frac{4}{3}\right] \cup (4, \infty)$

C) $[4, \infty)$

D) $\left(-\infty, -\frac{4}{3}\right]$

E) $\left(-\infty, -\frac{4}{3}\right) \cup \left(-\frac{4}{3}, \infty\right)$

18. Find the domain of x in the expression $\sqrt{25-x^2}$.

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

B) $[-5,5]$

C) $[-5,\infty)$

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

E) $(-\infty,5]$

19. Solve the inequality $4x-x^3<0$ and write the solution set in interval notation.

A) $(-2,0)\cup(2,\infty)$

B) $(-\infty,2)$

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

D) $(-2,2)$

E) $(-\infty,-2)\cup(0,2)$

20. Find the slope and y-intercept of the equation of the line.

$-2y + 2x = 14$

A) slope: –2; y-intercept: –2
B) slope: –7; y-intercept: 1
C) slope: 14; y-intercept: –2
D) slope: 1; y-intercept: –7
E) slope: –2; y-intercept: 14

21. Write the slope-intercept form of the equation of the line through the given point perpendicular to the given line.

point: (–5, –1) line: $-7x + 21y = 3$

A) $y = -7x + 34$

B) $y = -3x - 16$

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

D) $y=\frac{1}{3}x+\frac{2}{3}$

E) $y=\frac{1}{7}x-\frac{2}{7}$

22. Find the slope-intercept form of the line passing through the points.

(–5, 3), (2, 5)

A) $y = \frac{7}{2}x - \frac{31}{2}$

B) $y = -\frac{2}{7}x + \frac{11}{7}$

C) $y = \frac{7}{2}x + \frac{41}{2}$

D) $y = \frac{2}{7}x + \frac{31}{7}$

E) $y = \frac{2}{7}x - \frac{41}{7}$

23. Determine whether lines L_1 and L_2 passing through the pairs of points are parallel, perpendicular, or neither.

L_1 : (–7, –6), (–6, –4)
L_2 : (–4, –6), (–5, –8)

A) neither
B) parallel
C) perpendicular

24. Write the slope-intercept form of the equation of the line through the given point parallel to the given line.

point: (–7, 2) line: $18x + 6y = -2$

A) $y = -3x - 1$

B) $y = -\frac{1}{18}x + \frac{29}{18}$

C) $y = -3x - 19$

D) $y = \frac{1}{3}x + \frac{13}{3}$

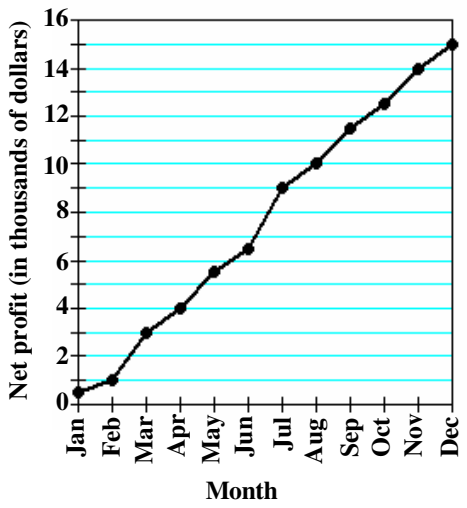
E) $y = 18x - 124$

25. Determine whether lines L_1 and L_2 passing through the pairs of points are parallel, perpendicular, or neither.

L_1 : (–4, 7), (5, –8)
L_2 : (8, 3), (53, 30)

A) perpendicular
B) neither
C) parallel

26. The graph shows the net profit (in thousands) for Enrico's childcare business for the past year.

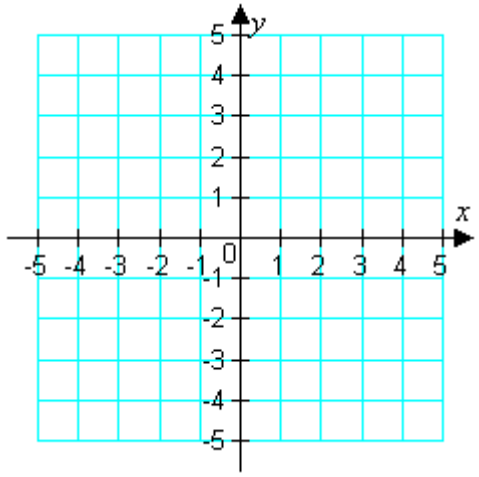


Use slopes to determine the month in which the net profit showed the least increase.

A) June
B) November
C) February
D) January
E) July

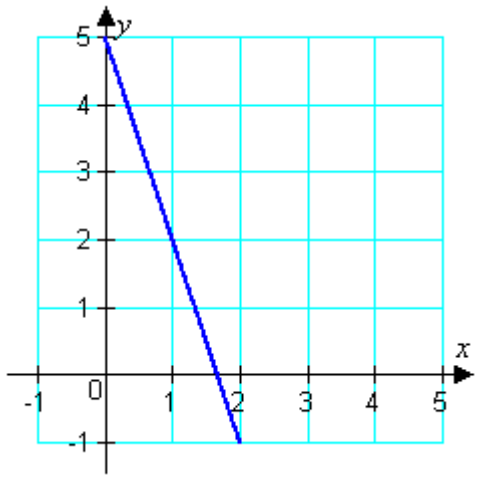
27. Plot the points and find the slope of the line passing through the pair of points.

(–1, 2), (–4, 2)



A) slope: –3
B) slope: $-\frac{1}{3}$
C) slope: undefined
D) slope: 0
E) slope: 1

28. Estimate the slope of the line.



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

B) 3

C) undefined

D) -3

E) $\frac{1}{3}$

29. Find the domain of the function.

$$f(t)=\frac{-t}{t+7}$$

A) all real numbers $t \neq -7$, $t \neq 0$
B) $t = -7, t = 0$
C) $t = -7$
D) all real numbers
E) all real numbers $t \neq -7$

30. Does the table describe a function?

Input value	3	4	5	4	3
Output value	–12	–8	0	8	12

A) no
B) yes

31. Which equation does not represent y as a function of x?
    A) $-7x + 6y = -2$
    B) $-2y^2 - 7x = 6$
    C) $7x = 9y$
    D) $-3y = -7$
    E) $7x^2 + 6y = -6$

32. Find all real values of x such that $f(x) = 0$.

$f(x) = 81x^2 - 64$

A) $\pm\frac{8}{9}$
B) $-\frac{64}{81}$
C) $\pm\frac{9}{8}$
D) $\frac{8}{9}$
E) $\pm\frac{64}{81}$

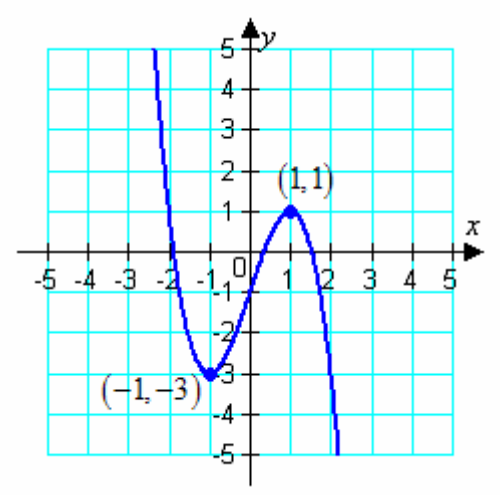
33. Determine whether the function is even, odd, or neither.

$f(x) = 4x^3 - 2x$

A) even
B) odd
C) neither

34. Determine the intervals over which the function is increasing, decreasing, or constant.

$f(x) = -x^3 + 3x - 1$



A)

decreasing on $(-\infty, 0)$

increasing on $(0, \infty)$

B)

decreasing on $(-\infty, -1)$

increasing on $(1, \infty)$

C)

decreasing on $(-\infty, \infty)$

D)

decreasing on $(-\infty, -1)$

increasing on $(-1, 1)$

decreasing on $(1, \infty)$

E)

decreasing on $(-\infty, -1)$

increasing on $(-1, \infty)$

35. Find the zeroes of the functions algebraically.

$f(x) = \dfrac{x^2 + 5x - 36}{-6x}$

A) $x = 4, x = -9, \ x = -\dfrac{1}{6}$

B) $x = -4, x = 9, \ x = -\dfrac{1}{6}$

C) $x = -4, x = 9$

D) $x = -\dfrac{1}{6}$

E) $x = 4, x = -9$

36. Write the linear function *f* such that it has the indicated values.

$f(-6) = 3, \qquad f(7) = -7$

A) $y = \dfrac{10}{13}x + \dfrac{99}{13}$

B) $y = \dfrac{9}{14}x + \dfrac{48}{7}$

C) $y = -\dfrac{10}{13}x - \dfrac{21}{13}$

D) $y = \dfrac{14}{9}x + \dfrac{37}{3}$

E) $y = -\dfrac{13}{10}x - \dfrac{24}{5}$

37. Write an equation for the function that is described by the following characteristics:

the shape of $f(x) = \sqrt[3]{x^2}$, but reflected in the *y*-axis, moved eight units down

A) $g(x) = -\sqrt[3]{x+8^2}$

B) $g(x) = \sqrt[3]{-x^2} - 8$

C) $g(x) = \sqrt[3]{-x^2} + 8$

D) $g(x) = -\sqrt[3]{x^2} + 8$

E) $g(x) = -\sqrt[3]{x-8^2}$

38. Describe the sequence of transformations from the related common function $f(x) = x^3$ to g.

$g(x) = 4(x-2)^3$

A) horizontal shift 2 units left; then vertical stretch by a factor of 4
B) vertical shift 2 units up; then vertical shrink by a factor of 4
C) horizontal shift 2 units right; then vertical stretch by a factor of 4
D) vertical shift 2 units down; then vertical shrink by a factor of 4
E) horizontal shift 2 units left; then vertical shrink by a factor of 4

39. Find $f \circ g$.

$f(x) = 4x - 4 \qquad g(x) = x - 3$

A) $(f \circ g)(x) = 4x^2 - 16x + 12$
B) $(f \circ g)(x) = 3x - 1$
C) $(f \circ g)(x) = 3x - 7$
D) $(f \circ g)(x) = 4x - 16$
E) $(f \circ g)(x) = 4x - 7$

40. Find $(fg)(x)$.

$f(x) = \sqrt{x} \qquad g(x) = \sqrt{7x+5}$

A) $(fg)(x) = x\sqrt{7+5x}$
B) $(fg)(x) = \sqrt{7x^2+5}$
C) $(fg)(x) = \sqrt{7x^2+5x}$
D) $(fg)(x) = \sqrt{8x+5}$
E) $(fg)(x) = x\sqrt{7} + \sqrt{5x}$

41. Find $(f+g)(x)$.

$f(x) = 6x^2 - 8x + 2$
$g(x) = -x^2 + 5x + 6$

A) $(f+g)(x) = 5x^2 - 3x + 8$
B) $(f+g)(x) = 7x^4 - 13x^2 - 4$
C) $(f+g)(x) = 5x^4 - 3x^2 + 8$
D) $(f+g)(x) = -5x^2 + 3x - 8$
E) $(f+g)(x) = 7x^2 - 13x - 4$

42. Find the inverse function of f.

$f(x) = x^5 + 1$

A) $f^{-1}(x) = \sqrt[5]{x} + 1$

B) $f^{-1}(x) = -\sqrt[5]{x+1}$

C) $f^{-1}(x) = \sqrt[5]{x} - 1$

D) $f^{-1}(x) = -\sqrt[5]{x} + 1$

E) $f^{-1}(x) = \sqrt[5]{x-1}$

43. The height, $h(x)$, of a punted rugby ball is given by $h(x) = -\frac{1}{64}x^2 + \frac{21}{32}x + 3$ where x is the horizontal distance in feet from the point where the ball is punted. How far, horizontally, is the ball from the kicker when it is at its highest point?

A) 24 feet

B) 21 feet

C) 31 feet

D) 45 feet

E) 26 feet

44. Determine the x-intercept(s) of the quadratic function $f(x) = x^2 + 4x + 5$.

A) no x-intercept(s)

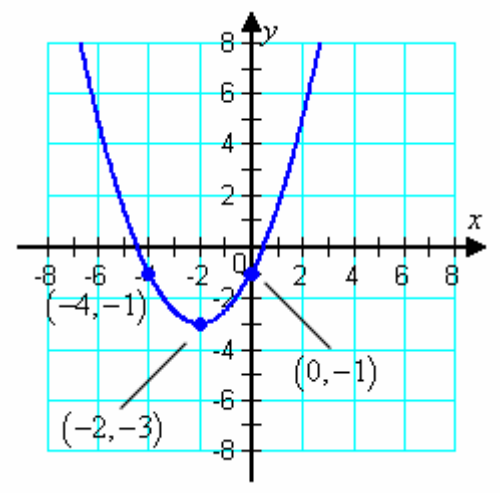
B) $(-8,0),(-2,0)$

C) $(-3,0),(4,0)$

D) $(-1,0),(-6,0)$

E) $(-8,0),(-6,0)$

45. Find the standard form of the quadratic function shown below:



A)
$$f(x) = -\frac{1}{2}(x-2)^2 + 3$$

B)
$$f(x) = (x+2)^2 - 3$$

C)
$$f(x) = \frac{1}{2}(x+2)^2 - 3$$

D)
$$f(x) = -\frac{2}{3}(x-1)^2 + 3$$

E)
$$f(x) = \frac{1}{4}(x-2)^2 + 3$$

46. Determine the vertex of the graph of the quadratic function $f(x) = x^2 + 3x + \frac{13}{4}$.

A) $\left(3, \frac{13}{4}\right)$

B) $\left(\frac{-3}{2}, 1\right)$

C) $\left(\frac{3}{4}, \frac{5}{4}\right)$

D) $\left(\frac{-3}{2}, \frac{11}{2}\right)$

E) $\left(\frac{3}{2}, \frac{13}{4}\right)$

47. Compare the graph of $q(x) = 7(x-2)^2 + 9$ with $q(x) = x^2$.

A) $q(x) = 7(x-2)^2 + 9$ shifts right 2 units, shifts upward 9 units, and shrinks by a factor of $\frac{1}{7}$.

B) $q(x) = 7(x-2)^2 + 9$ shifts left 2 units, shifts upward 9 units, and stretches by a factor of 7.

C) $q(x) = 7(x-2)^2 + 9$ shifts right 2 units, shifts upward 9 units, and stretches by a factor of 7.

D) $q(x) = 7(x-2)^2 + 9$ shifts left 2 units, shifts downward 9 units, and stretches by a factor of 7.

E) $q(x) = 7(x-2)^2 + 9$ shifts right 2 units, shifts downward 9 units, and shrinks by a factor of $\frac{1}{7}$.

48. Find all real zeros of the polynomial $f(x) = x^4 + 15x^3 + 56x^2$ and determine the multiplicity of each.

A) $x = 0$, multiplicity 1; $x = 7$, multiplicity 1; $x = -7$, multiplicity 1; $x = 8$, multiplicity 1

B) $x = -7$, multiplicity 2; $x = -8$, multiplicity 2

C) $x = 0$, multiplicity 2; $x = -7$, multiplicity 1; $x = -8$, multiplicity 1

D) $x = 0$, multiplicity 2; $x = 7$, multiplicity 1; $x = 8$, multiplicity 1

E) $x = 7$, multiplicity 2; $x = 8$, multiplicity 2

49. Find all real zeros of the polynomial $f(x) = x^3 + 9x^2 - 64x - 576$ and determine the mutiplicity of each.

A) $x = -9$, multiplicity 2; $x = -8$, multiplicity 1

B) $x = -8$, multiplicity 1; $x = 9$, multiplicity 1; $x = -9$, multiplicity 1

C) $x = 8$, multiplicity 1; $x = -8$, multiplicity 1; $x = -9$, multiplicity 1

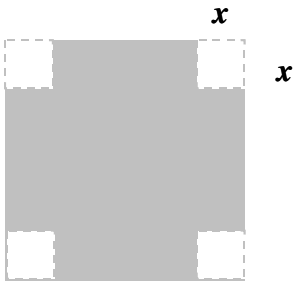
D) $x = -9$, multiplicity 3

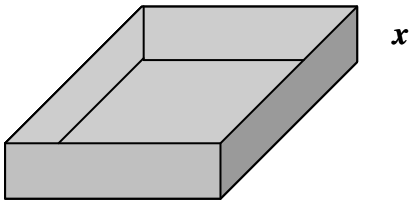
E) $x = 8$, multiplicity 2; $x = -9$, multiplicity 1

50. Describe the right-hand and the left-hand behavior of the graph of $u(x) = -\frac{8}{5}\left(x^3 - 10x^2 + 3x + 1\right)$.

A) Because the degree is odd and the leading coefficient is positive, the graph rises to the left and rises to the right.
B) Because the degree is even and the leading coefficient is negative, the graph rises to the left and falls to the right.
C) Because the degree is odd and the leading coefficient is positive, the graph falls to the left and falls to the right.
D) Because the degree is odd and the leading coefficient is negative, the graph rises to the left and falls to the right.
E) Because the degree is odd and the leading coefficient is negative, the graph falls to the left and rises to the right.

51. An open box is to be made from a square piece of cardboard, 36 inches on a side, by cutting equal squares with sides of length x from the corners and turning up the sides (see figure below). Determine the function, V, in terms of x, that represents the volume of the box.





A) $V(x) = -4x^3 + 72x^2 - 36x$
B) $V(x) = -2x^3 + 36x^2$
C) $V(x) = 4x^3 - 144x^2 + 1296x$
D) $V(x) = 4x^3 - 72x^2 + 36x$
E) $V(x) = -4x^3 + 72x^2$

52. Divide.

$$\left(x^3 - 48x + 128\right) \div \left(x - 4\right)$$

A) $x^2 - 4x - 48$
B) $x^2 + 12x + 32$
C) $x^2 + 4x - 32$
D) $x^2 + 16x - 8$
E) $x^2 + 8x + 16$

53. Write $f(x)=x^3+3x^2-14x+15$ in the form $f(x)=(x-k)q(x)+r$ when $k=-6$.

A) $f(x)=(x+6)(x^2-3x+4)-9$

B) $f(x)=(x+6)(x^2+3x+4)+9$

C) $f(x)=(x-6)(x^2+3x+4)-9$

D) $f(x)=(x+6)(x^2-3x+4)$

E) $f(x)=(x-6)(x^2-3x+4)+9$

54. Using the factors $(x-5)$ and $(x-4)$, find the remaining factor(s) of $f(x)=x^3-10x^2+29x-20$ and write the polynomial in fully factored form.

A) $f(x)=(x-5)(x-4)^2$

B) $f(x)=(x-5)^2(x-4)$

C) $f(x)=(x-5)(x-4)(x+3)$

D) $f(x)=(x-5)(x-4)(x+1)$

E) $f(x)=(x-5)(x-4)(x-1)$

55. Find all zeros of the function $f(x)=x^2(x-1)(x^3-216)$.

A) $x=0,1,6$

B) $x=1,216$

C) $x=0,-1,-6$

D) $x=0,1,6,-3-3\sqrt{3}i,-3+3\sqrt{3}i$

E) $x=-1,-216$

56. Find all real solutions of the polynomial equation $x^4-7x^3+42x-36=0$.

A) $x=1,-36,12$

B) $x=1,\ -7,-6$

C) $x=1,\pm\sqrt{6}$

D) $x=1,\ 36$

E) $x=1,\ 6,\pm\sqrt{6}$

57. Assume that y is directly proportional to x. If $x = 8$ and $y = 6$, determine a linear model that relates y and x.

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

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

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

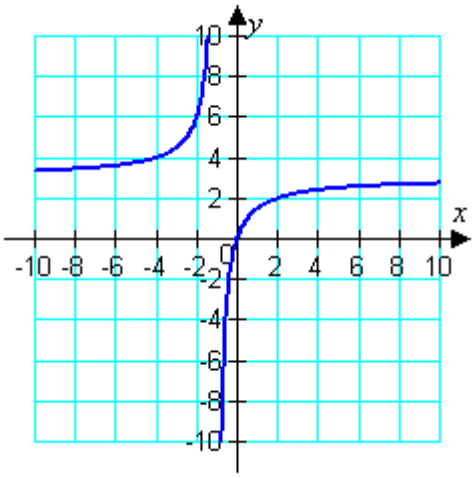
D) $y = \frac{4}{3}x$

E) $y = \frac{3}{4}x$

58. The graph of the function

$$f(x) = \frac{3x}{x+1}$$

is shown below. Determine the vertical and horizontal asymptotes of its graph.



A) horizontal: $y = -3$; vertical $x = -1$

B) horizontal: $y = 3$; vertical $x = -1$

C) horizontal: $y = -1$; vertical $x = 3$

D) horizontal: $y = 3$; vertical $x = 1$

E) horizontal: $y = 3$; vertical $x = -3$

59. The population density D (in people/mi^2) of a certain metropolis is related to the distance x (in miles) from the center of the city by the formula $D = \frac{7500x}{x^2 - 25}$. Within what distance, from the center of the city, will the population density meet or exceed 700 people/mi^2? Round answer to nearest tenth of a mile.

A) 11.8 miles
B) 11.5 miles
C) 12.7 miles
D) 12.3 miles
E) 13.0 miles

60. Determine the value that $f(x) = 7 - \frac{5}{x}$ approaches as x increases and decreases in magnitude without bound.

A) 4
B) 6
C) 5
D) 8
E) 7

61. Determine the zeros (if any) of the rational function $f(x) = \frac{x^2 - 36}{x - 4}$.

A) no zeros
B) $x = 4$
C) $x = -6, x = 6$
D) $x = \frac{3}{2}, x = -\frac{3}{2}$
E) $x = -36, x = 36$

62. Determine the equations of any horizontal and vertical asymptotes of $f(x) = \frac{x + 7}{x^2 - 49}$.

A) horizontal: $y = 7$; vertical: $x = 0$
B) horizontal: $y = 0$; vertical: $x = 7$
C) horizontal: $y = 0$; vertical: none
D) horizontal: $y = -7$; vertical: $x = 7$
E) horizontal: $y = 0$; vertical: $x = -7$

63. Given $f(x)=\dfrac{x^2-16}{x-4}$. Determine the domain of $f(x)$ and find any vertical asymptotes.

A) **domain:** all real numbers except $x=4$
vertical asymptote: $x=4$

B) **domain:** all real numbers except $x=4$
vertical asymptote: none

C) **domain:** all real numbers except $x=-4$
vertical asymptote: $x=-4$

D) **domain:** all real numbers except $x=4$
vertical asymptote: $x=-4$

E) **domain:** all real numbers
vertical asymptote: none

64. Given $f(x)=\dfrac{x^2+2x-1}{x+3}$, determine the equations of any slant and vertical asymptote.

A) slant: $y=x-4$; vertical: $x=2$

B) slant: $y=x+1$; vertical: $x=-1$

C) slant: $y=x-1$; vertical: $x=-3$

D) slant: none; vertical: none

E) slant: $y=x+5$; vertical: none

65. Identify all intercepts of $f(x)=\dfrac{x^2}{x^2+4}$.

A) x-intercept: $(0,0)$; y-intercept: $(0,0)$

B) x-intercept: none; y-intercept: none

C) x-intercepts: $(-2,0)$ and $(2,0)$; y-intercept: $(0,1)$

D) x-intercept: none; y-intercept: $(0,3)$

E) x-intercept: none; y-intercept: $(0,1)$

66. Given the equation $\dfrac{x-3}{x+7}=0$, solve for any x-intercepts.

A) $(3,0)$

B) $\left(-\dfrac{3}{7},0\right)$

C) $(3,0)$ and $(-7,0)$

D) $(1,0)$

E) $(-7,0)$

67. Find the vertices and asymptotes of the hyperbola.

$$\frac{x^2}{9}-\frac{y^2}{25}=1$$

A) vertices: $(\pm 3, 0)$ asymptote: $y=\pm\frac{5}{3}x$

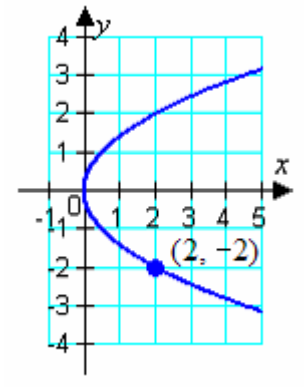
B) vertices: $(\pm 3, 5)$ asymptote: $y=\pm\frac{3}{5}x$

C) vertices: $(0, \pm 3)$ asymptote: $y=\pm\frac{3}{5}x$

D) vertices: $(0, \pm 3)$ asymptote: $y=\pm\frac{5}{3}x$

E) vertices: $(\pm 3, 0)$ asymptote: $y=\pm\frac{3}{5}x$

68. Find the standard form of the equation of the parabola and determine the coordinates of the focus.



A) $y^2=\frac{1}{2}x$ focus: $\left(\frac{1}{2}, 0\right)$

B) $y^2=\frac{1}{2}x$ focus: $(2, 0)$

C) $x=\frac{1}{2}y^2$ focus: $(2, 0)$

D) $y^2=2x$ focus: $\left(\frac{1}{2}, 0\right)$

E) $x=2y^2$ focus: $(2, 0)$

69. Find the vertex and focus of the parabola.

$y^2 = \frac{7}{5}x$

A) vertex: (0, 0) focus: $\left(\frac{7}{20}, 0\right)$

B) vertex: $\left(0, -\frac{5}{4}\right)$ focus: $\left(0, \frac{7}{20}\right)$

C) vertex: $\left(0, -\frac{5}{4}\right)$ focus: $\left(\frac{7}{5}, \frac{7}{5}\right)$

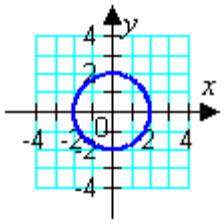
D) vertex: (0, 0) focus: $\left(0, \frac{7}{5}\right)$

E) vertex: (0, 0) focus: $\left(\frac{7}{5}, 0\right)$

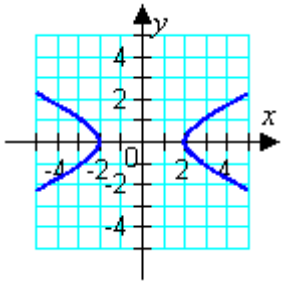
70. Match the equation with its graph.

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

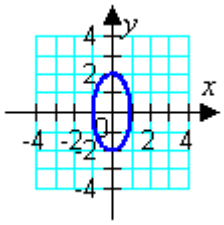
A)



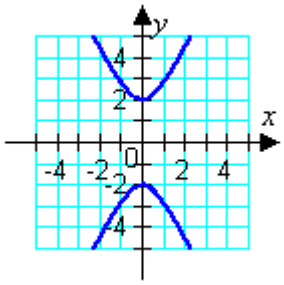
B)



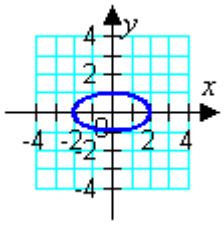
C)



D)



E)



71. Find the center and vertices of the ellipse.

$$\frac{x^2}{81}+\frac{y^2}{16}=1$$

A) center: (9, 0) vertices: (0, –4), (0, 4)
B) center: (0, 0) vertices: (–9, 0), (9, 0)
C) center: (0, 0) vertices: (–4, 0), (4, 0)
D) center: (0, 0) vertices: (0, –9), (0, 9)
E) center: (9, 4) vertices: (–9, –4), (9, 4)

72. A signal amplifier is an electronic device that sends a large output voltage in response to a small input voltage. The response of a certain signal amplifier at several input voltages is shown in the table below.

Input signal (millivolts)	Output signal (volts)
20	0.52
40	0.88
60	1.67
80	2.32
100	2.54

A model for the data is given by $g(x)=\dfrac{2.2}{1+88.9e^{-0.08x}}+0.4$, where x is the input voltage in millivolts and $g(x)$ is the output voltage in volts.

Use the model to estimate the output voltage (to the nearest hundredth of a volt) for an input signal of 39 millivolts.

A) $g(39)=0.40$ volts
B) $g(39)=1.85$ volts
C) $g(39)=1.05$ volts
D) $g(39)=0.95$ volts
E) $g(39)=0.85$ volts

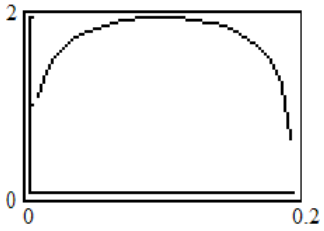
73. Evaluate the function $f(x)=\dfrac{1}{5}\ln e^{-x}$ at $x=10$ without using a calculator.

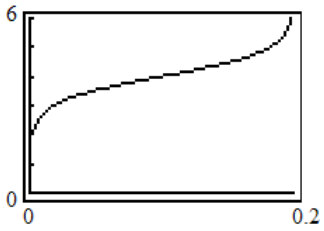
A) 2
B) undefined
C) $\dfrac{1}{2}$
D) –2
E) $-\sqrt{e}$

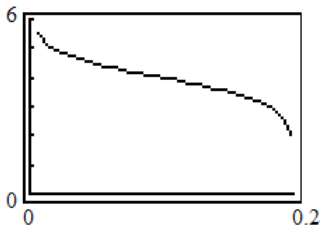
74. The pH of an acidic solution is a measure of the concentration of the acid particles in the solution, with smaller values of the pH indicating higher acid concentration. In a laboratory experiment, the pH of a certain acid solution is changed by dissolving over-the-counter antacid tablets into the solution. In this experiment, the pH changes according to the equation

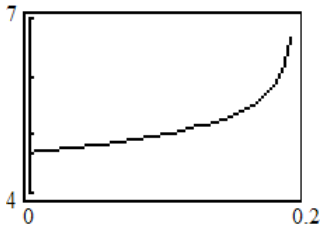
$$\text{pH} = 4.0 + \log\left(\frac{x}{0.2 - x}\right),$$

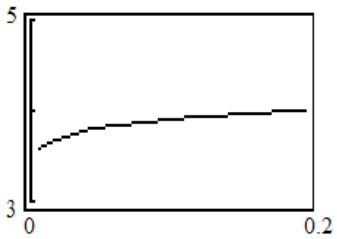
where x is the number of grams of antacid added to the solution. Use a graphing utility to graph the pH function on the interval $0 < x < 0.2$.

A) 

B) 

C) 

D) 

E) 

75. Rewrite the logarithmic equation $\log_4 \frac{1}{16} = -2$ in exponential form.

A) $4^{1/16} = -2$

B) $\left(\frac{1}{16}\right)^{-2} = 4$

C) $4^{-2} = -\frac{1}{16}$

D) $4^{-2} = \frac{1}{16}$

E) $4^{16} = -2$

76. Condense the expression $5(\log x - \log y)$ to the logarithm of a single term.

A) $\log \frac{x^5}{y}$

B) $\log\left(\frac{x}{y}\right)^5$

C) $5(\log x - \log y)$

D) $\log \frac{5x}{5y}$

E) $\log \frac{x^5}{\sqrt[5]{y}}$

77. Put the expressions in the appropriate order: $\log 7, \log_5 7, \frac{1}{5}\log 7$.

A) The expressions are equivalent.

B) $\log_5 7 < \frac{1}{5}\log 7 < \log 7$

C) $\frac{1}{5}\log 7 < \log 7 < \log_5 7$

D) $\log 7 < \log_5 7 < \frac{1}{5}\log 7$

E) $\log_5 7 < \log 7 < \frac{1}{5}\log 7$

78. Simplify the expression $\log_5 225$.

A) $2\log_5 9$

B) $2+\log_5 9$

C) The expression cannot be simplified.

D) 9

E) $45\log_5 2$

79. Evaluate the logarithm $\log_7 294$ using the change of base formula. Round to 3 decimal places.

A) 2.468

B) 11.060

C) 5.684

D) 2.921

E) 0.342

80. Solve $\left(\frac{1}{5}\right)^x = 125$ for x.

A) -1

B) -5

C) 1

D) no solution

E) -3

81. Solve for x: $5(10^{x-3}) = 23$. Round to 3 decimal places.

A) 1.362

B) –1.362

C) no solution

D) 3.663

E) 0.663

82. Determine whether or not $x = \frac{3}{7}$ is a solution to $3^{3x-3} = 81$.

A) no

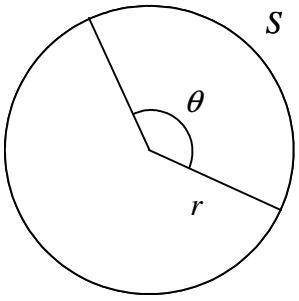
B) yes

83. How long will it take an investment that pays 6% compounded annually to double in value? Round to the nearest tenth of a year.
    A) 16.4 years
    B) 11.9 years
    C) 5.2 years
    D) 14.1 years
    E) 18.1 years

84. What is the half-life of a radioactive substance if 3.9 g decays to 2.80 g in 57 hours? Round to the nearest tenth of an hour.
    A) 59.6 hours
    B) 20.6 hours
    C) 29.8 hours
    D) 89.4 hours
    E) 119.2 hours

85. An initial investment of $1000 grows at an annual interest rate of 6% compounded continuously. How long will it take to double the investment?
    A) 12.55 years
    B) 1 year
    C) 11.55 years
    D) 12.00 years
    E) 11.00 years

86. Find the angle, in radians, in the figure below if $S = 12$ and $r = 8$.



    A) $\frac{3}{2}$
    B) $\frac{3\pi}{2}$
    C) $\frac{5\pi}{2}$
    D) $\frac{2}{3}$
    E) $\frac{2\pi}{3}$

87. Find the length of the arc, *S,* on a circle of radius 6 feet intercepted by a central angle of $270°$. Round to two decimal places.
    A) $S = 22.62$ feet
    B) $S = 28.27$ feet
    C) $S = 37.70$ feet
    D) $S = 18.85$ feet
    E) $S = 56.55$ feet

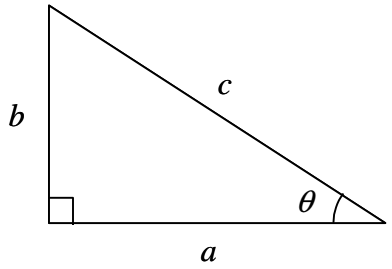
88. Find (if possible) the complement of $114°$.
    A) not possible
    B) $54°$
    C) $84°$
    D) $24°$
    E) $66°$

89. Rewrite $-6.28°$ in radian measure. Round to three decimal places.
    A) –0.013
    B) –0.022
    C) –0.016
    D) –0.110
    E) –0.020

90. Determine the quadrant in which a $-150°9'$ angle lies.
    A) 3rd quadrant
    B) 4th quadrant
    C) 2nd quadrant
    D) 1st quadrant

91. Use a calculator to evaluate $\tan 121°29'$. Round your answer to four decimal places.
    A) –1.6454
    B) –1.6989
    C) –1.9540
    D) –2.8388
    E) –1.6329

92. Find the exact value of $\csc\theta$, using the triangle shown in the figure below, if $a = 4$ and $b = 3$.



A) $\frac{5}{4}$
B) $\frac{4}{5}$
C) $\frac{5}{3}$
D) $\frac{4}{3}$
E) $\frac{3}{5}$

93. If $\cos\theta = \frac{\sqrt{2}}{2}$, find the value of θ in degrees $(0 < \theta < 90°)$ without the aid of a calculator.

A) $\theta = 60°$
B) $\theta = 15°$
C) $\theta = 75°$
D) $\theta = 45°$
E) $\theta = 90°$

94. If θ is an acute angle and $\cot\theta = \frac{1}{8}$, determine $\sin\theta$.

A) $\sin\theta = \frac{\sqrt{65}}{8}$
B) $\sin\theta = \frac{1}{\sqrt{65}}$
C) $\sin\theta = 8$
D) $\sin\theta = \frac{8}{\sqrt{65}}$
E) $\sin\theta = \sqrt{65}$

95. Use a calculator to evaluate $\sin 245°$. Round your answer to four decimal places.

A) –0.7942
B) –0.0442
C) –0.7856
D) –0.9063
E) –1.4063

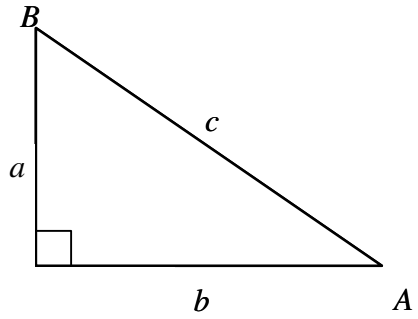
96. Determine the exact value of the cosecant of the quadrant angle $\frac{\pi}{2}$.

A) $-\frac{\sqrt{2}}{2}$
B) $-\frac{\sqrt{3}}{2}$
C) 1
D) $\frac{1}{2}$
E) –1

97. Determine the period and amplitude of $y = 3\cos\left(\frac{x}{7} + \frac{\pi}{6}\right)$.

A) period: 14π ; amplitude: 3
B) period: $\frac{\pi}{7}$; amplitude: 3
C) period: $-\frac{2\pi}{7}$; amplitude: –3
D) period: 7π ; amplitude: 6
E) period: $\frac{2\pi}{7}$; amplitude: 3

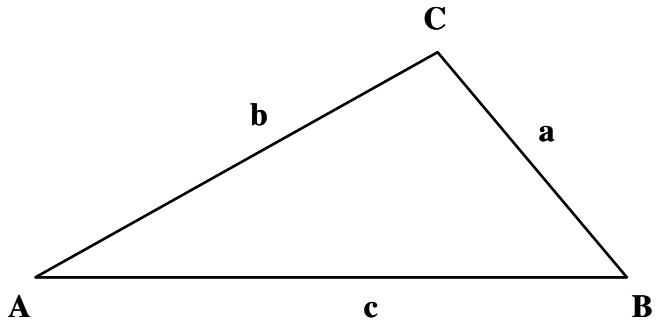
98. If $B = 39°$ and $a = 12$, determine the value of b. Round to two decimal places.



A) 9.33
B) 9.72
C) 14.82
D) 7.55
E) 15.44

99. Given $C = 110°$, $B = 52°$, and $c = 15$, use the Law of Sines to solve the triangle for the value of a. Round answer to two decimal places.
A) $a = 6.16$
B) $a = 5.88$
C) $a = 3.71$
D) $a = 4.93$
E) $a = 17.89$

100. Given $A = 60°$, $B = 73°$, and $a = 4.1$, use the Law of Sines to solve the triangle for the value of b. Round answer to two decimal places.



A) $b = 3.71$
B) $b = 4.53$
C) $b = 3.14$
D) $b = 4.85$
E) $b = 3.46$

101. Given $A = 111°$, $b = 10$, and $c = 9$, use the Law of Cosines to solve the triangle for the value of a. Round answer to two decimal places.

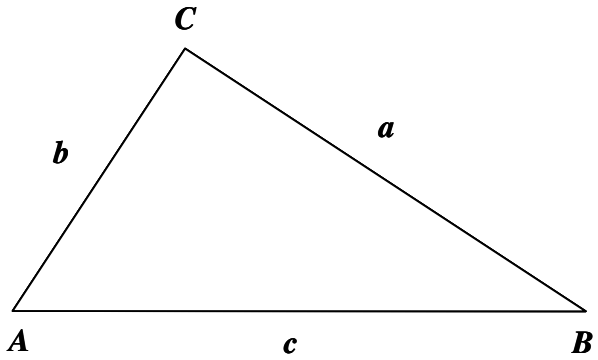


Figure not drawn to scale

A) 10.79
B) 15.67
C) 14.45
D) 15.06
E) 13.23

102. Given $a = 9$, $b = 12$, and $c = 14$, use the Law of Cosines to solve the triangle for the value of A. Round answer to two decimal places.

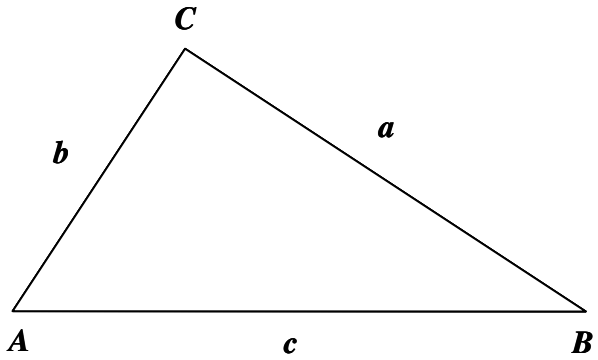


Figure not drawn to scale

A) 39.57°
B) 58.14°
C) 82.28°
D) 60.33°
E) 80.44°

103. Determine which ordered pair is a solution of the system.

$$\begin{cases} 3x + 7y = 5 \\ -3x + y = 11 \end{cases}$$

A) (2, -3)
B) (3, 2)
C) (7, -6)
D) (-3, 2)
E) (6, 7)

104. Find the dimensions of the rectangle meeting the specified conditions.
The perimeter is 60 feet and the length is 2 feet more than the width.

A) 19 ft × 17 ft
B) 15 ft × 15 ft
C) 18 ft × 12 ft
D) 18 ft × 16 ft
E) 16 ft × 14 ft

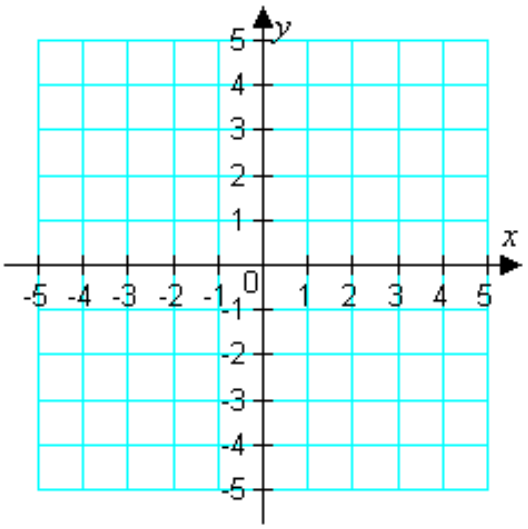
105. Determine which ordered pair is a solution of the system.

$$\begin{cases} x - 3y = -7 \\ 5x - 2y = -9 \end{cases}$$

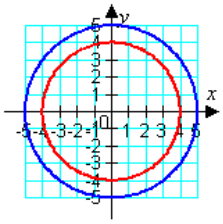
A) (1, 2)
B) (–5, 7)
C) (2, –1)
D) (7, 5)
E) (–1, 2)

106. Solve the system graphically.

$$\begin{cases} x^2 + y^2 = 25 \\ x^2 + (y-1)^2 = 16 \end{cases}$$

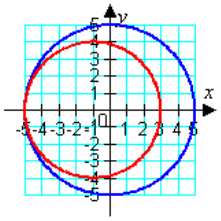


A)



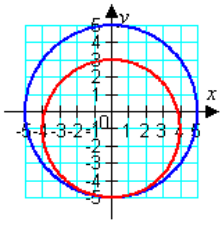
no solution

B)



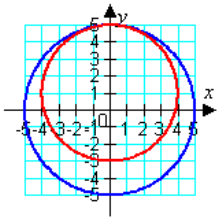
$(-5, 0)$

C)



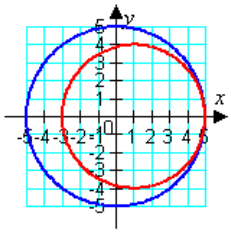
$(0, -5)$

D)



$(0, 5)$

E)



$(5, 0)$

107. An airplane flying into a headwind travels 248 miles in 2 hours and 35 minutes. On the return flight, the distance is traveled in 2 hours. Find the airspeed of the plane and the speed of the wind, assuming that both remain constant.
   A) plane speed = 87 mph; wind speed = 3 mph
   B) plane speed = 125 mph; wind speed = 21 mph
   C) plane speed = 110 mph; wind speed = 14 mph
   D) plane speed = 125 mph; wind speed = 14 mph
   E) plane speed = 87 mph; wind speed = 14 mph

108. Solve using any method.

$$\begin{cases} -6x - 2y = 7 \\ 6x - 2y = 15 \end{cases}$$

   A) inconsistent
   B) $\left(\frac{2}{3}, -\frac{11}{2}\right)$
   C) $\left(a, \frac{-7-6a}{2}\right)$ (dependent)
   D) $\left(6, -\frac{43}{2}\right)$
   E) $\left(9, \frac{39}{2}\right)$

109. Find the equation of the parabola $y = ax^2 + bx + c$ that passes through the points.

$$(-1,3), (0,5), (1,11)$$

   A) $y = 2x^2 + 4x - 5$
   B) $y = 2x^2 + 4x + 5$
   C) $y = 3x^2 + 4x + 5$
   D) $y = 2x^2 - 4x - 5$
   E) $y = 3x^2 + 4x + 4$

110. Determine which one of the ordered triples below is a solution of the given system of equations.

$$\begin{cases} 7x + 3y - z = 37 \\ 3x - 4y + 8z = 78 \\ 3x + 8y + 5z = 66 \end{cases}$$

A) (1, –8, –6)
B) (–3, 2, 8)
C) (8, 1, 6)
D) (–3, 2, –52)
E) (6, 1, 8)

111. Write the system of linear equations represented by the augmented matrix. (Use variables x, y, z, and w.)

$$\left[\begin{array}{cccc|c} -2 & 0 & 0 & -7 & 5 \\ 2 & 7 & 0 & 0 & 8 \\ 0 & -5 & 1 & 7 & -1 \\ 0 & 0 & -4 & 7 & 4 \end{array}\right]$$

A)
$$\begin{cases} -2x - 7w = 5 \\ 2x + 7y = 8 \\ -5y + z + 7w = -1 \\ -4y + 7z = 4 \end{cases}$$

B)
$$\begin{cases} -2x - 7w = 5 \\ 2x + 7y = 8 \\ -5y + z + 7w = -1 \\ -4z + 7w = 4 \end{cases}$$

C)
$$\begin{cases} -2x - 7y = 5 \\ 2x + 7y = 8 \\ -5x + y + 7z = -1 \\ -4x + 7y = 4 \end{cases}$$

D)
$$\begin{cases} -2x - 7z = 5 \\ 2x + 7y = 8 \\ -5y + z + 7w = -1 \\ -4z + 7w = 4 \end{cases}$$

E)
$$\begin{cases} -2x - 7z = 5 \\ 2x + 7z = 8 \\ -5y + z + 7w = -1 \\ -4z + 7w = 4 \end{cases}$$

112. Determine the order of the matrix.

$$\begin{bmatrix} 0 & -8 & -5 \end{bmatrix}$$

A) 3
B) 3×3
C) 1×3
D) 1×1
E) 3×1

113. Write the augmented matrix for the system of linear equations.

$$\begin{cases} x - 3y + 8z = -5 \\ 9y - 8z = 4 \\ x + 6z = -8 \end{cases}$$

A)
$$\left[\begin{array}{ccc|c} 1 & -3 & 8 & -5 \\ 9 & -8 & 0 & 4 \\ 1 & 6 & 0 & -8 \end{array}\right]$$

B)
$$\left[\begin{array}{ccc|c} 1 & -3 & 8 & -5 \\ 0 & 9 & -8 & 4 \\ 1 & 6 & 0 & -8 \end{array}\right]$$

C)
$$\left[\begin{array}{ccc|c} 1 & -3 & 8 & -5 \\ 1 & 9 & -8 & 4 \\ 1 & 1 & 6 & -8 \end{array}\right]$$

D)
$$\left[\begin{array}{ccc|c} 1 & -3 & 8 & -5 \\ 0 & 9 & -8 & 4 \\ 1 & 0 & 6 & -8 \end{array}\right]$$

E)
$$\left[\begin{array}{ccc|c} 1 & -3 & 8 & -5 \\ & 9 & -8 & 4 \\ 1 & & 6 & -8 \end{array}\right]$$

114. If possible, find AB.

$$A = \begin{bmatrix} 6 & -5 \\ -6 & -6 \\ 8 & 2 \end{bmatrix}, B = \begin{bmatrix} -7 \\ 4 \end{bmatrix}$$

A) $\begin{bmatrix} -22 \\ 66 \\ -64 \end{bmatrix}$

B) $\begin{bmatrix} -62 \\ 18 \\ -48 \end{bmatrix}$

C) $\begin{bmatrix} -22 & 66 & -64 \end{bmatrix}$

D) not possible

E) $\begin{bmatrix} -42 & -20 \\ 42 & -24 \\ -56 & 8 \end{bmatrix}$

115. Find x and y.

$$\begin{bmatrix} x-1 & -9 & -4y \\ -7 & 9x & 2 \\ -2 & y+3 & 9 \end{bmatrix} = \begin{bmatrix} 10x-10 & -9 & -12 \\ -7 & 9 & 2 \\ -2 & 6 & 9 \end{bmatrix}$$

A) $x = 2, y = 2$

B) no solution

C) $x = 1, y = 2$

D) $x = 1, y = 3$

E) $x = 3, y = 2$

116. If possible, find $3A + 4B$.

$$A = \begin{bmatrix} -1 & 1 & 2 \\ 4 & 6 & -6 \end{bmatrix}, B = \begin{bmatrix} 3 & -4 & 4 \\ 2 & -9 & 0 \end{bmatrix}$$

A) $\begin{bmatrix} 2 & -3 & 6 \\ 6 & -3 & -6 \end{bmatrix}$

B) not possible

C) $\begin{bmatrix} 9 & -13 & 22 \\ 20 & -18 & -18 \end{bmatrix}$

D) $\begin{bmatrix} -15 & 19 & -10 \\ 4 & 54 & -18 \end{bmatrix}$

E) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$

117. Find x and y.

$$\begin{bmatrix} 4 & x \\ y & 0 \end{bmatrix} = \begin{bmatrix} 4 & 5 \\ -6 & 0 \end{bmatrix}$$

A) $x = 4, y = 0$
B) $x = 5, y = -6$
C) $x = 5, y = 5$
D) $x = -6, y = 5$
E) $x = -5, y = 6$

118. Evaluate the expression.

$$\begin{bmatrix} 3 & -2 \\ -6 & 3 \end{bmatrix} + \begin{bmatrix} -6 & 5 \\ -7 & 1 \end{bmatrix} + \begin{bmatrix} -9 & -4 \\ -5 & 3 \end{bmatrix}$$

A) $\begin{bmatrix} -3 & 3 \\ -13 & 4 \end{bmatrix}$
B) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
C) $\begin{bmatrix} -12 & -1 \\ -18 & 7 \end{bmatrix}$
D) not possible
E) $\begin{bmatrix} 6 & 7 \\ -8 & 1 \end{bmatrix}$

119. Solve for X in the equation given.

$$5X = -2A - B, A = \begin{bmatrix} 4 & 5 \\ -3 & -5 \end{bmatrix} \text{ and } B = \begin{bmatrix} -33 & -35 \\ -4 & 30 \end{bmatrix}$$

A) $\begin{bmatrix} \frac{1}{5} & \frac{1}{5} \\ \frac{1}{2} & -\frac{1}{4} \end{bmatrix}$
B) $\begin{bmatrix} 5 & 5 \\ 2 & -4 \end{bmatrix}$
C) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
D) $\begin{bmatrix} 25 & 25 \\ 10 & -20 \end{bmatrix}$
E) $\begin{bmatrix} 5 & -5 \\ -2 & -4 \end{bmatrix}$

120. Of the products AB, BA, A^2, and B^2, which ones are possible for the given matrices?

$$A = \begin{bmatrix} -9 \\ 1 \\ 1 \end{bmatrix}, B = \begin{bmatrix} 1 & -7 & -6 \end{bmatrix}$$

A) A^2 only
B) BA only
C) AB only
D) AB and BA only
E) B^2 only

121. Solve the system of linear equations $\begin{cases} 8x + y = 5 \\ 16x - 5y = -15 \end{cases}$ using an inverse matrix.

A) $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \frac{5}{28} \\ \frac{25}{7} \end{bmatrix}$

B) $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \frac{15}{56} \\ \frac{80}{7} \end{bmatrix}$

C) $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \frac{15}{56} \\ \frac{25}{7} \end{bmatrix}$

D) $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} -\frac{15}{56} \\ -\frac{10}{7} \end{bmatrix}$

E) $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \frac{15}{56} \\ -\frac{10}{7} \end{bmatrix}$

122. Given matrix $A = \begin{bmatrix} 5 & 21 \\ -10 & 7 \end{bmatrix}$. Find A^{-1} the inverse matrix.

A) $A^{-1} = \begin{bmatrix} \frac{1}{35} & -\frac{3}{35} \\ \frac{2}{49} & \frac{1}{49} \end{bmatrix}$

B) $A^{-1} = \begin{bmatrix} \frac{1}{5} & \frac{1}{21} \\ \frac{1}{-10} & \frac{1}{7} \end{bmatrix}$

C) $A^{-1} = \begin{bmatrix} \frac{2}{35} & -\frac{1}{35} \\ \frac{1}{49} & \frac{3}{49} \end{bmatrix}$

D) $A^{-1} = \begin{bmatrix} -\frac{1}{35} & \frac{3}{35} \\ \frac{2}{49} & -\frac{1}{49} \end{bmatrix}$

E) $A^{-1} = \begin{bmatrix} \frac{1}{25} & -\frac{3}{35} \\ \frac{2}{49} & \frac{1}{35} \end{bmatrix}$

123. Use a determinant to find an equation of the line passing through the points $(-5,15)$ and $(-2,9)$.

A) $x + 4y = 10$

B) $x - 2y = 5$

C) $-2x + y = 10$

D) $2x + y = 10$

E) $2x + y = 5$

124. Use Cramer's Rule to solve the following system of linear equations:

$$\begin{cases} 4x & - 8z = 6 \\ - 4y & + 12z = 3 \\ 8x & + 20z = 0 \end{cases}$$

A) $x = \frac{5}{6};\ y = -\frac{15}{4};\ z = -\frac{3}{2}$

B) $x = -\frac{3}{2};\ y = \frac{3}{2};\ z = -\frac{9}{4}$

C) $x = \frac{3}{2};\ y = -\frac{9}{4};\ z = -\frac{3}{2}$

D) $x = \frac{1}{6};\ y = -\frac{7}{4};\ z = -\frac{1}{6}$

E) $x = \frac{5}{6};\ y = -\frac{7}{4};\ z = -\frac{1}{3}$

Algebra 3 Flex Credit Exam Review

1. A
   Section: 1.1
2. B
   Section: 1.1
3. B
   Section: 1.1
4. B
   Section: 1.2
5. C
   Section: 1.2
6. B
   Section: 1.2
7. B
   Section: 1.3
8. E
   Section: 1.4
9. E
   Section: 1.5
10. A
    Section: 1.5
11. A
    Section: 1.6
12. A
    Section: 1.6
13. E
    Section: 1.7
14. A
    Section: 1.7
15. B
    Section: 1.7
16. A
    Section: 1.7
17. B
    Section: 1.8
18. B
    Section: 1.8
19. A
    Section: 1.8
20. D
    Section: 2.1
21. B
    Section: 2.1
22. D
    Section: 2.1
23. B
    Section: 2.1
24. C
    Section: 2.1
25. A

Section: 2.1
26. D
Section: 2.1
27. D
Section: 2.1
28. D
Section: 2.1
29. E
Section: 2.2
30. A
Section: 2.2
31. B
Section: 2.2
32. A
Section: 2.2
33. B
Section: 2.3
34. D
Section: 2.3
35. E
Section: 2.3
36. C
Section: 2.4
37. B
Section: 2.5
38. C
Section: 2.5
39. D
Section: 2.6
40. C
Section: 2.6
41. A
Section: 2.6
42. E
Section: 2.7
43. B
Section: 3.1
44. A
Section: 3.1
45. C
Section: 3.1
46. B
Section: 3.1
47. C
Section: 3.1
48. C
Section: 3.2
49. C
Section: 3.2
50. D

Section: 3.2
51. C
Section: 3.2
52. C
Section: 3.3
53. A
Section: 3.3
54. E
Section: 3.3
55. D
Section: 3.4
56. E
Section: 3.4
57. E
Section: 3.5
58. B
Section: 4.1
59. C
Section: 4.1
60. E
Section: 4.1
61. C
Section: 4.1
62. B
Section: 4.1
63. B
Section: 4.1
64. C
Section: 4.2
65. A
Section: 4.2
66. A
Section: 4.2
67. A
Section: 4.3
68. D
Section: 4.3
69. A
Section: 4.3
70. E
Section: 4.3
71. B
Section: 4.3
72. E
Section: 5.1
73. D
Section: 5.2
74. B
Section: 5.2
75. D

Section: 5.2

76. B
    Section: 5.3
77. C
    Section: 5.3
78. B
    Section: 5.3
79. D
    Section: 5.3
80. E
    Section: 5.4
81. D
    Section: 5.4
82. A
    Section: 5.4
83. B
    Section: 5.5
84. E
    Section: 5.5
85. C
    Section: 5.5
86. A
    Section: 6.1
87. B
    Section: 6.1
88. A
    Section: 6.1
89. D
    Section: 6.1
90. A
    Section: 6.1
91. E
    Section: 6.2
92. C
    Section: 6.2
93. D
    Section: 6.2
94. D
    Section: 6.2
95. D
    Section: 6.3
96. C
    Section: 6.3
97. A
    Section: 6.4
98. B
    Section: 6.7
99. D
    Section: 8.1
100. B

Section: 8.1

101. B
Section: 8.2

102. A
Section: 8.2

103. D
Section: 9.1

104. E
Section: 9.1

105. E
Section: 9.1

106. D
Section: 9.1

107. C
Section: 9.2

108. B
Section: 9.2

109. B
Section: 9.3

110. E
Section: 9.3

111. B
Section: 10.1

112. C
Section: 10.1

113. D
Section: 10.1

114. B
Section: 10.2

115. D
Section: 10.2

116. C
Section: 10.2

117. B
Section: 10.2

118. C
Section: 10.2

119. B
Section: 10.2

120. D
Section: 10.2

121. A
Section: 10.3

122. A
Section: 10.3

123. E
Section: 10.5

124. E
Section: 10.5