

ACCUPLACER PRACTICE TEST (Courtesy of UTEP Math Resource Center For Students)

1. Assuming x and y are positive integers; determine how many possible solutions the following equation has for x .

$$x + 5y = 25$$

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5

2. Determine the set of solutions that satisfy the following equation.

$$\sqrt{|x|} = 3$$

- a) $\{-3, -1, 0, 1, 3\}$
- b) $\{-9, 0, 9\}$
- c) $\{-9\}$
- d) $\{-9, 9\}$
- e) $\{9\}$

3. Determine the solution of the following system of equations.

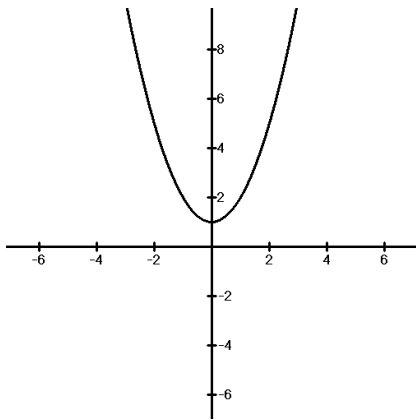
$$x + 2y = 3$$

$$2x + 3y = 4$$

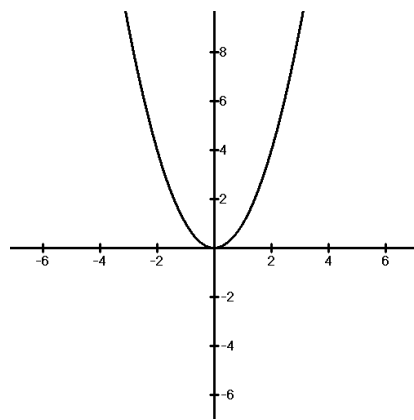
- a) $(1, -2)$
- b) $(-3, -2)$
- c) $(3, 2)$
- d) $(-1, 2)$
- e) No solution

4. Graph the following function: $y = x^2 - a$

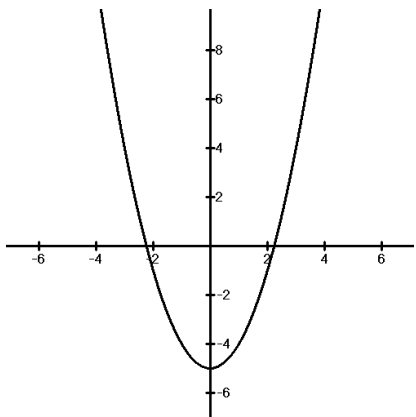
a)



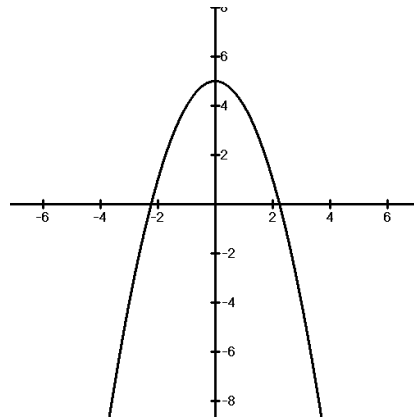
b)



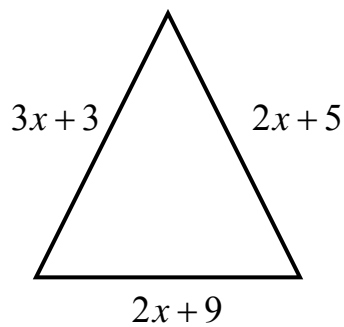
c)



d)



5. Find the perimeter of the following triangle.



a) $6x + 16$

b) $12x^3 + 135$

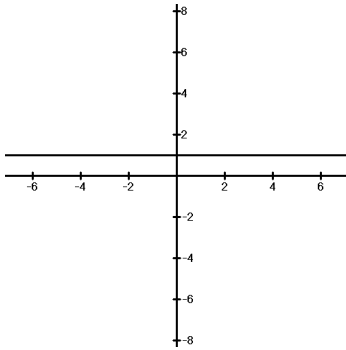
c) $12x^2 - 15$

d) $7x + 17$

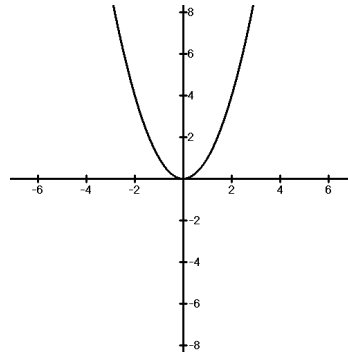
e) None of the above

6. If $\sin^2 x + \cos^2 x = k$, what is the graph of $y = kx^2$.

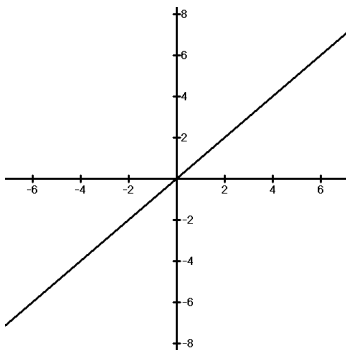
a)



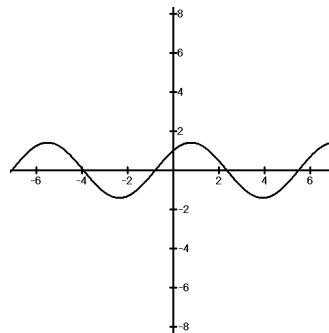
b)



c)



d)



7. Determine which of the following is equal to 0.

- a) $\cos 30^\circ$
- b) $\sin 45^\circ$
- c) $\tan 45^\circ$
- d) $\sin 180^\circ$
- e) $\cos 180^\circ$

8. Determine the value of k given that -2 is a root of $x^3 - 2x^2 + 3x + k$

- a) 22
- b) -22
- c) 10
- d) 20
- e) 6

9. Which of the following has the largest period.

a) $\cos(2x)$

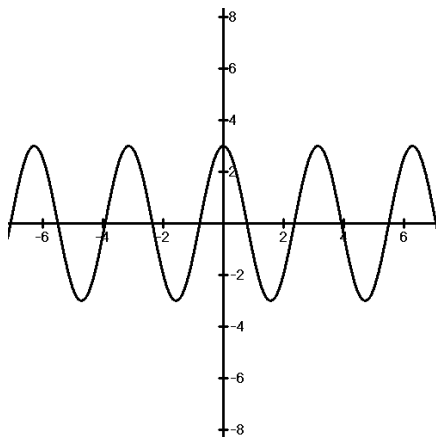
b) $\cos\left(\frac{x}{2}\right)$

c) $\cos(x)$

d) $\cos(3x)$

e) $\cos\left(\frac{x}{4}\right)$

10. Which is the equation of the following graph.



a) $6\cos(2x)$

b) $3\cos\left(\frac{x}{2}\right)$

c) $3\cos(2x)$

d) $6\cos\left(\frac{x}{2}\right)$

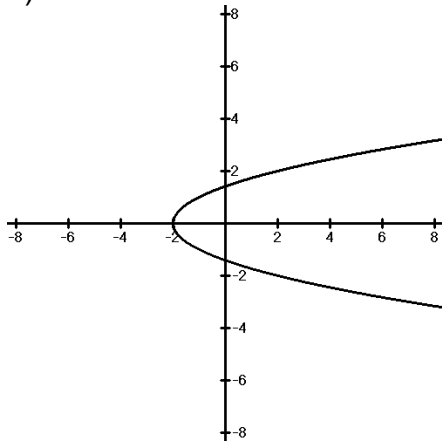
e) $3\cos(x)$

11. The admission at an ice hockey game is \$15 for adults and \$11 for children. A total of 650 tickets were sold. Determine how many children's tickets and how many adult tickets were sold if a total of \$8790 was collected.

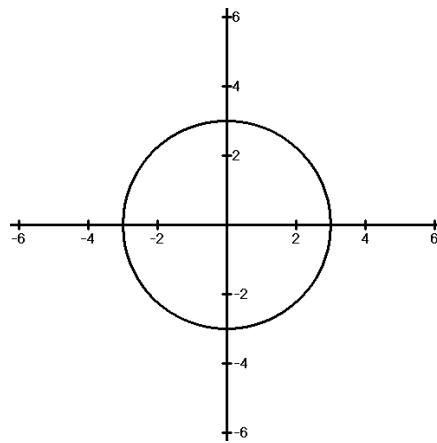
- a) 250 adult, 400 children
- b) 320 adult, 330 children
- c) 400 adult, 250 children
- d) 410 adult, 240 children
- e) 370 adult, 280 children

12. Determine which of the following relations is a function.

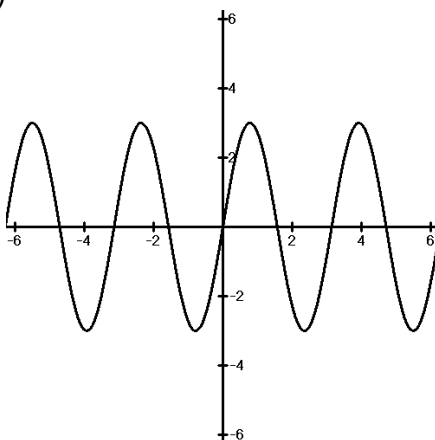
a)



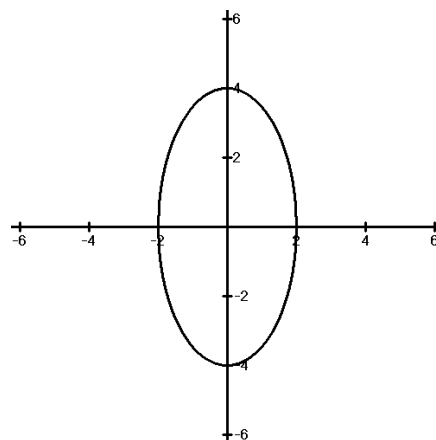
b)



c)



d)



13. Evaluate the expression $-|4-10|+|-3|-|5|$

- a) 5
- b) 7
- c) -8
- d) 10
- e) -6

14. Evaluate the expression, given $p = -5$, $q = -3$, $r = 4$.

$$\frac{6p - 2q^2}{-3r}$$

- a) 2
- b) 6
- c) 9
- d) -5
- e) 4

15. Solve for the specified variable.

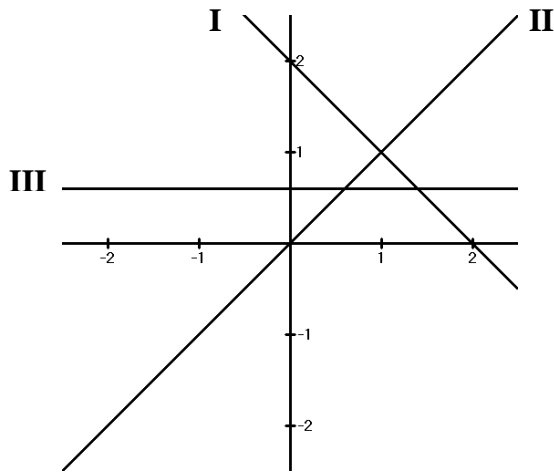
$$I = \frac{E}{R+s} \text{ for } s.$$

- a) $s = \frac{E}{R+I}$
- b) $s = \frac{E}{I+R}$
- c) $s = \frac{E}{R} + \frac{E}{I}$
- d) $s = \frac{E}{I} - R$
- e) $s = \frac{E}{R+E}$

16. If $(3x^2 - 2x + 7) = 0$, what is $\left(x - \frac{1}{3}\right)^2 =$

- a) $\frac{7}{9}$
- b) $\frac{20}{9}$
- c) $-\frac{7}{9}$
- d) $-\frac{20}{9}$
- e) None of the above

17. Which of the following statements is true?



- a) $m_1 > m_2$
- b) $|m_1| = |m_2|$
- c) $|m_1| > |m_2|$
- d) $m_1 = m_2 = m_3$
- e) $m_3 > m_2$

18. Which of these functions has least period?

- a) $y = \sin \frac{1}{2}x$
- b) $y = 2 \sin x$
- c) $y = \sin(2x)$
- d) $y = 3 \sin(3x)$
- e) $y = \sin(4x)$

19. Which is equal to 1?

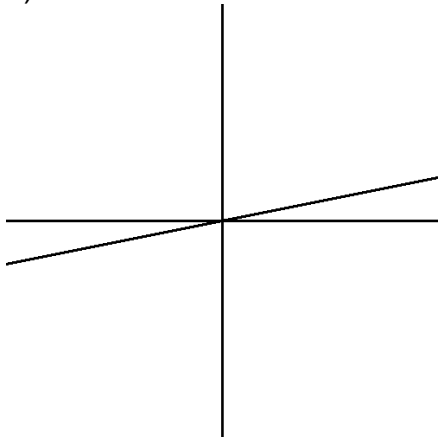
- a) $\sin(30)$
- b) $\cos(30)$
- c) $\tan(45)$
- d) $\tan(90)$
- e) $\tan(0)$

20. Simplify: $\frac{\frac{1}{x} + 1}{\frac{1}{x}} =$

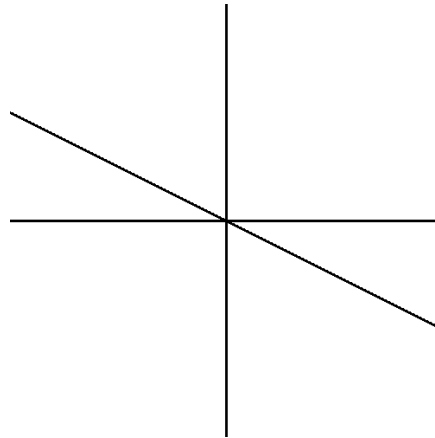
- a) $\frac{1}{x} + x$
- b) $1 + x$
- c) $x + 2$
- d) $\frac{1+x}{x}$
- e) $x - 1$

21. Which of the following graphs has $m > 1$?

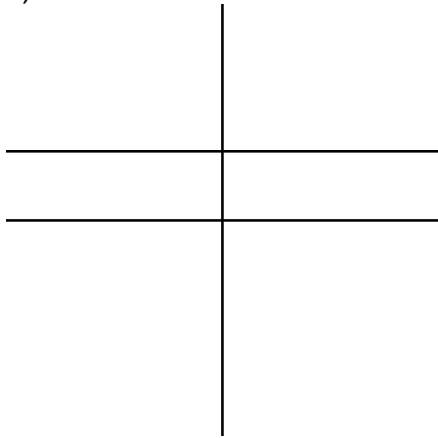
a)



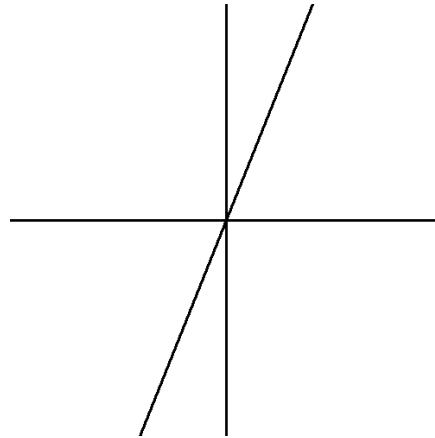
b)



c)



d)



22. The owner of Sea Apartments has a total of 12 apartments consisting on \$450 one-room and \$600 two-room. The total amount of rent that he receives is \$6450. How many one and two room apartments are?

- a) 5 of \$450, 7 of \$600
- b) 3 of \$450, 9 of \$600
- c) 10 of \$450, 2 of \$600
- d) 7 of \$450, 5 of \$600
- e) 9 of \$450, 3 of \$600

23. Find the equivalent of V in terms of x if $V = t \cdot r$, where $t = 4x + 1$ and $r = \frac{1}{4}x - 1$

- a) $\frac{1}{x} + x$
- b) $x^2 - \frac{15}{4}x - 1$
- c) $x^2 + 2$
- d) $x^2 + \frac{15}{4}x + 1$
- e) $x^2 - \frac{15}{4}x + 1$

24. For the figure below, the area of the entire rectangle is $\frac{10}{x}$. The area of the shaded rectangle is $\frac{x}{x^2 + 10}$. What is the area of the white part?

- a) $\frac{9x^2 - 100}{x^3 + 10x}$
- b) $\frac{9x^2 + 100}{x^3 - 10x}$
- c) $\frac{(3x + 10)^2}{x(x^2 + 10)}$
- d) $\frac{(3x)^2 + 10^2}{x(x^2 + 10)}$

e) None of the above



25. If $f(x) = \frac{3x-1}{2}$, what is $f^{-1}(0) = ?$

a) $-\frac{1}{2}$

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

c) $\frac{1}{2}$

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

e) Not enough information.

26. Simplify: $\frac{\frac{3}{a} - \frac{3}{b}}{\frac{1}{x^2} + \frac{1}{y^2}}$

a) $\frac{3y^2 - 3x^2}{ab}$

b) $\frac{3(a-b)(x^2y^2)}{(ab)(y^2 - x^2)}$

c) 0

d) $\frac{3(b-a)(x^2y^2)}{(ab)(y^2 - x^2)}$

e) $\frac{-3(a-b)(xy)^2}{(ab)(x^2 + y^2)}$

27. What is $\frac{3x}{5}$ if $x = \frac{3}{9}$?

a) $\frac{6}{45}$

b) $\frac{18}{15}$

c) $\frac{1}{5}$

d) $\frac{42}{45}$

e) None of the above

28. What is the area of the circle?

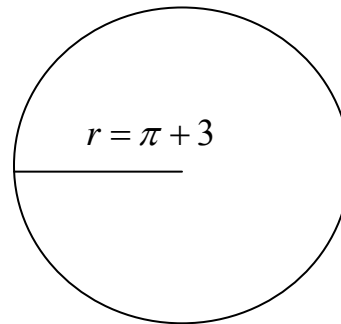
a) $\pi(x+3)$

b) $\pi(x^2 + 3^2)$

c) $2\pi(x+3)$

d) $\pi x^2 + 6x\pi + 9\pi$

e) None of the above



29. Simplify: $\frac{x^2 + 4x + 4}{(x+2)} \cdot \frac{(x+3)}{(x+2)}$

a) $x+2$

b) $x+1$

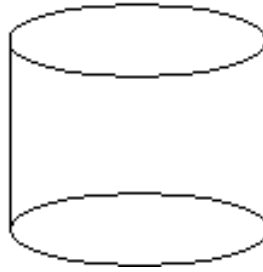
c) $x+3$

d) $x-3$

e) None of the above

30. If the volume of the given figure is $V = \pi(x^3 - x^2 - x + 1)$ and $r = (x - 1)$, what is h ?

- a) x
- b) $x + 1$
- c) $x - 2$
- d) $x - 1$
- e) 6



$$V = \pi \cdot r^2 \cdot h$$

31. Which is a reduced expression?

- a) $\frac{x^2 + 4x}{2x}$
- b) $\frac{2x + 4}{2}$
- c) $\frac{6x + 5}{2}$
- d) $\frac{xy}{x^2y^2}$
- e) None of the above

32. A dress cost C dollars. If the dress has a discount of 20% and because being a member of the company give you an additional 5% more after the sale. What is the price a member would pay for the dress?

- a) $.84C$
- b) $.25C$
- c) $.75C$
- d) $.76C$
- e) $.74C$

33. What is the numerator of the simplified version of the following expression?

$$\frac{15(x^2 + 25)(3x - 2)(y - 2)(y + 2)}{3(y^2 - 4)(3x - 2)(x - 5)}$$

- a) $x + 5$
- b) $5(x + 5)$
- c) $(y^2 - 4)(x - 5)$
- d) $5(x^2 + 25)$
- e) $15(x^2 + 5)$

34. How many solutions does the following linear system have?

$$4x + 5y = 10$$

$$8x + 10y = 20$$

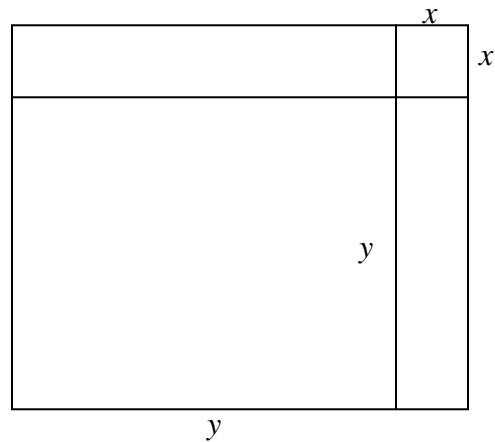
- a) One
- b) Infinitely
- c) None
- d) Two
- e) None of the above

35. If -2 is a root of $f(x) = x^3 + 2x^2 - 2x + k$, what is k ?

- a) -4
- b) 5
- c) 6
- d) -20
- e) 1

36. Divide the figure in two squares and two rectangles. Then find the area.

- a) $x^2 + xy + y^2$
- b) $(x + y)^2$
- c) $x^2 + y^2$
- d) $2x + 2y$
- e) $2x^2 + 2xy + y^2$



37. If $f(x) = x^3 - 2x^2 - x + 1$, what is $f(-x)$?

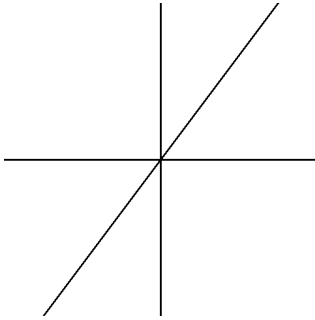
- a) $-x^3 - 2x^2 + x + 1$
- b) $x^3 - 2x^2 + x + x$
- c) $-(x^3 - 2x^2 - x + 1)$
- d) $-x^4 + 2x^3 + x^2 - x$
- e) $x^2 - 2x - 1$

38. Find a root of $x^2 - 5x + 3$

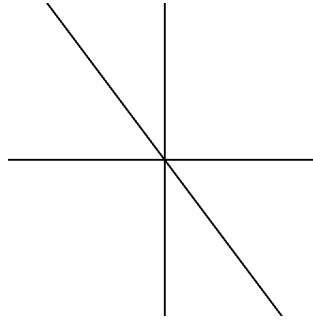
- a) $\frac{5 - \sqrt{13}}{2}$
- b) $\frac{-5 - \sqrt{13}}{2}$
- c) $\frac{-5 + \sqrt{13}}{2}$
- d) $\frac{25 - \sqrt{13}}{2}$
- e) None of the above

39. If $\sin^2 x + \cos^2 x = k$, what is the graph of $y = -kx$?

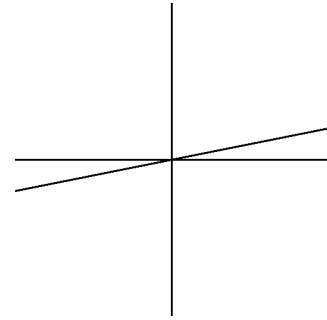
a)



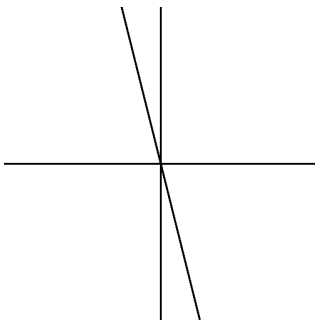
b)



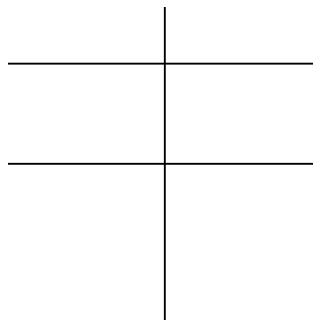
c)



d)



e)



40. If $n^2 \left(\frac{x}{2}\right)^n$ is the n^{th} term, which is the 5th term?

a) $n^5 \left(\frac{5}{2}\right)^n$

b) $25 \left(\frac{x^5}{32}\right)$

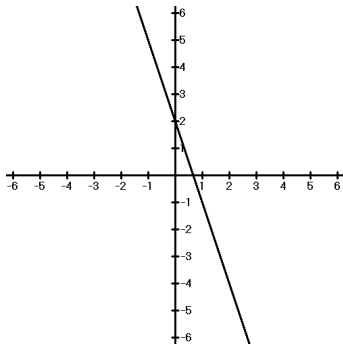
c) $5^2 \left(\frac{5}{2}\right)^n$

d) $5^2 \left(\frac{x^5}{2}\right)$

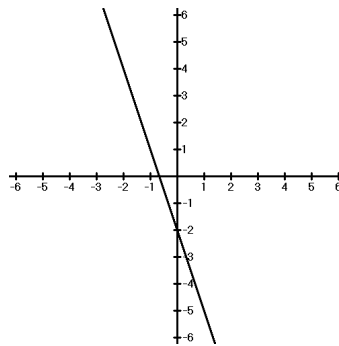
e) $5^2 \left(\frac{n}{2}\right)^5$

41. Find the graph of $y = -3x + 2$.

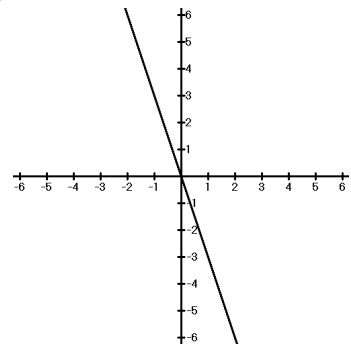
a)



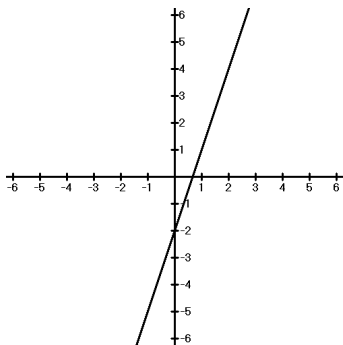
b)



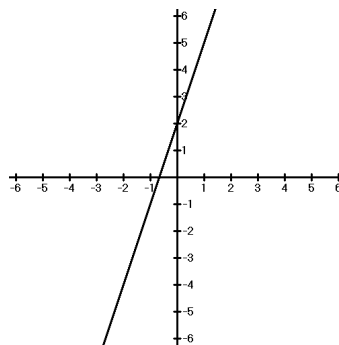
c)



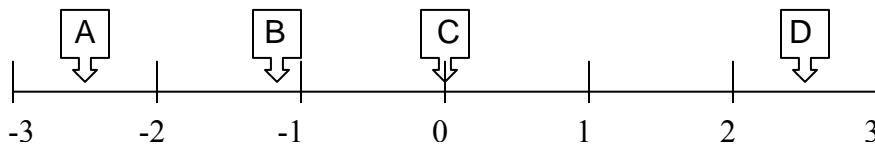
d)



e)



42. What is $\left| -4 - \left(-1\frac{1}{2} \right) \right|$?

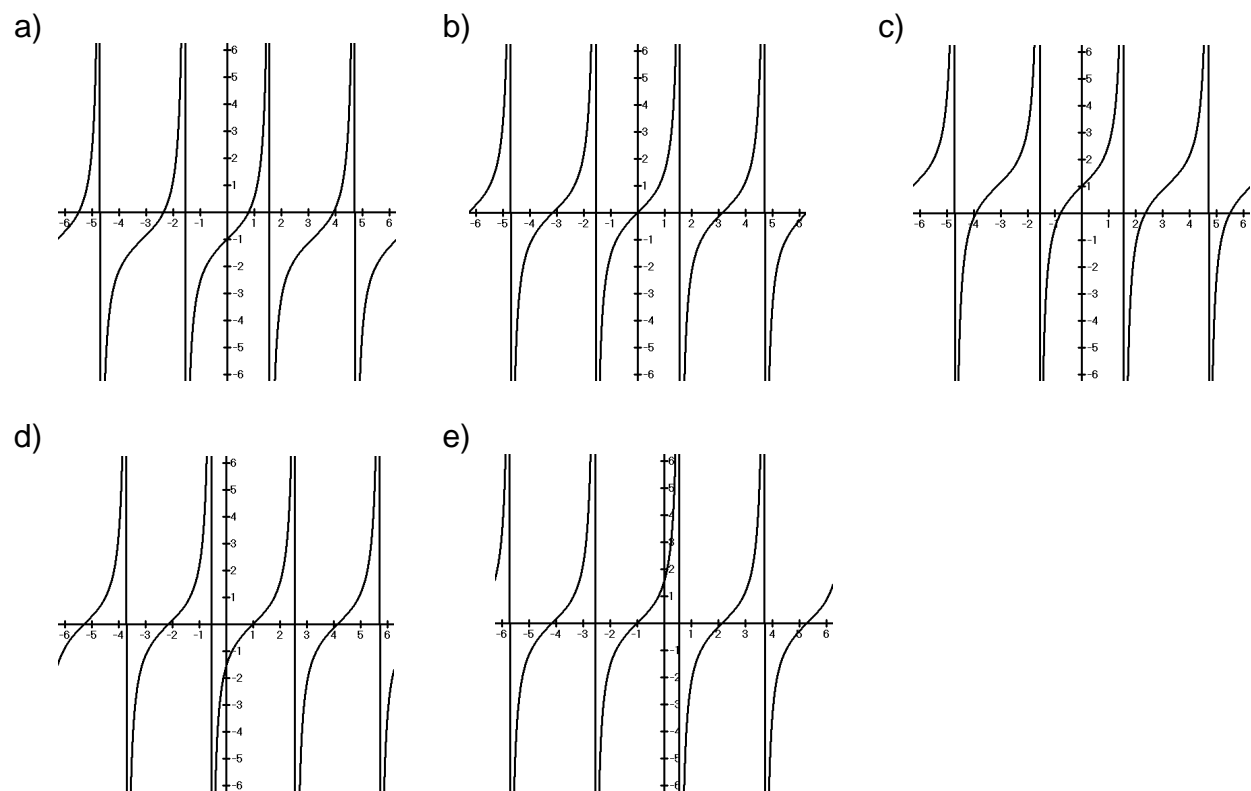


- a) A
- b) B
- c) C
- d) D
- e) None of the above

43. If $\frac{1}{x} + \frac{1}{9} + \frac{1}{b} = 1$, what is x ?

- a) $8 - b$
- b) $-8 - b$
- c) $\frac{1}{9b}$
- d) $\frac{-9b}{-8b + 9}$
- e) $\frac{-8b + 9}{-9b}$

44. Graph the following equation: $y = \tan(\theta) + 1$



ANSWER KEY TO ACCUPLACER PRACTICE TEST

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