1. A real number that is an infinite nonrepeating decimal is a(n) _____ number.

A. infinite

B. absolute

C. irrational

D. rational

2. Calculate the difference using only pencil and paper. $\frac{16}{7} - \frac{15}{16}$

A. $\frac{151}{112}$

B. $\frac{67}{112}$

C. $\frac{123}{112}$

D. $\frac{207}{112}$

E. $\frac{565}{336}$

F. $\frac{677}{336}$

G. $\frac{229}{336}$

H. $\frac{1}{9}$

3. Use the associative property to rewrite $(5 + 7) + 9$

A. $5 + (7 + 9)$

B. $12 + 9$

C. 21

D. $5 + 16$

E. $(7 + 5) + 9$

4. Calculate the product using only pencil and paper. $\frac{7}{6} \cdot \left(-\frac{11}{3}\right)$

A. $\frac{77}{72}$

B. $\frac{154}{27}$

C. $-\frac{77}{18}$

D. $-\frac{77}{27}$

E. $-\frac{77}{6}$

F. $-\frac{77}{24}$

G. $-\frac{154}{9}$

H. $-\frac{77}{54}$

5. Calculate the value of the expression. $3 \cdot (3 + 10)$

A. -57

B. $Undefined$

C. -19

D. 38

E. 39

F. 19

6. Evaluate the expression $6a + 8z$ at the values $a = 3$ and $z = 2$.

A. 34

B. 27

C. 31

D. 32

E. 38

F. 28

G. 39

H. 43

7. If a point (x, y) is in quadrant I, then

A. $x > 0$ and $y < 0$.

B. $x > 0$ and $y > 0$.

C. $x < 0$ and $y > 0$.

D. $x < 0$ and $y < 0$.

8. The sequence -3, 1, 5, 9,... is

A. an arithmetic sequence with common difference 6

B. an arithmetic sequence with common difference -2

C. an arithmetic sequence with common difference 2

D. not an arithmetic sequence

E. an arithmetic sequence with common difference -6

F. an arithmetic sequence with common difference 4

G. an arithmetic sequence with common difference -4

9. The overhead cost for a company is $800 per day. The cost of producing each item is $25. The total cost of production is the sum of the overhead cost and the cost of producing each item. Write a function f that gives the total cost of producing x units per day, and evaluate and interpret $f(150)$.

A. $f(150) = 825$. This means it will cost $825 to produce 150 units.

B. $f(150) = 4550$. This means it will cost $4550 to produce 150 units.

C. $f(150) = 2850$. This means it will cost $2850 to produce 150 units.

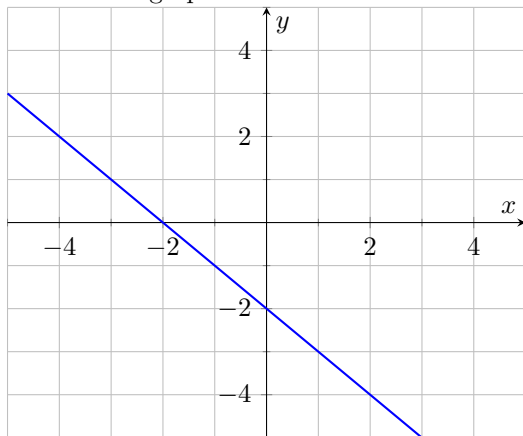D. $f(150) = 825$. This means it will cost $150 to produce 825 units.

E. $f(150) = 2850$. This means it will cost $150 to produce 2850 units.

F. $f(150) = 615$. This means it will cost $615 to produce 150 units.

G. $f(150) = 615$. This means it will cost $150 to produce 615 units.

H. $f(150) = 4550$. This means it will cost $150 to produce 4550 units.

10. Use the graph of the function below to find the value of $f(3)$

A. -3

B. -4

C. -2

D. -6

E. -5

F. -8

x	y
-5	-6
-4	-4
-3	-2
-2	0
-1	2
0	4
1	6
2	8
3	10
4	12
5	14

11. Use the table [above] of a linear equation $y = mx + b$ to find its x and y-intercepts.

A. The x-intercept is $(0, -2)$ and the y-intercept is $(4, 0)$.

B. The x-intercept is $(-2, 4)$ and the y-intercept is $(4, -2)$.

C. The x-intercept is $(4, 0)$ and the y-intercept is $(0, -2)$.

D. The x-intercept is $(4, -2)$ and the y-intercept is $(-2, 4)$.

E. The x-intercept is $(0, 4)$ and the y-intercept is $(-2, 0)$.

F. The x-intercept is $(-2, 0)$ and the y-intercept is $(0, 4)$.

12. Solve the system of linear equations $\left\{ \begin{array}{l} y = x - 3 \\ y = 2x + 3 \end{array} \right\}$ by graphing each equation on the same coordinate system and determining the point of intersection. Check the coordinates of this point in both of the linear equations.

A. $(-7, -10)$.

B. $(-6, -9)$.

C. $(-8, -11)$.

D. $(-5, -8)$.

E. $(-9, -12)$.

F. $(-3, -6)$.

13. Solve the following linear equation $-x - 3 = x + 5$.

A. 4

B. -8

C. $-\frac{4}{3}$

D. -16

E. -2

F. 1

G. 2

H. -4

14. Children are often prescribed the same drugs used for adults. A commonly used formula for adjusting the dosage to account for the age of the child is Youngs formula. Youngs formula for a 12-year-old child is $y = 0.5x$, where x is the adult dosage and y is the child dosage. What is the adult dosage if the child dosage of a medication is 6 mg?

A. The adult dosage is 2.4 mg.

B. The adult dosage is 1.5 mg.

C. The adult dosage is 3.6 mg.

D. The adult dosage is 12 mg.

E. The adult dosage is 3 mg.

F. The adult dosage is 9 mg.

G. The adult dosage is 15 mg.

H. The adult dosage is 4.5 mg.

15. Solve the following linear equation $4x - 3 = 5$.

A. -1

B. $-\frac{1}{2}$

C. $\frac{2}{3}$

D. -6

E. -4

F. 2

G. -2

H. $\frac{1}{2}$

16. Solve the following linear equation $\frac{-x-4}{3} + 2 = \frac{3x+1}{6} - \frac{3}{4}$.

A. 6

B. -3

C. $\frac{9}{2}$

D. $\frac{1}{2}$

E. $\frac{3}{8}$

F. $-\frac{3}{4}$

G. $\frac{3}{4}$

H. $\frac{3}{2}$

17. Solve $F = \frac{9}{5}C + 32$ for the variable C (Fahrenheit and Celsius temperatures)

A. $C = \frac{9}{5}(F + 32)$

B. $C = \frac{9}{5}(F - 32)$

C. $C = \frac{5}{9}(F - 32)$

D. $C = \frac{9}{5}F + 32$

E. $C = \frac{5}{9}(F + 32)$

F. $C = \frac{5}{9}F + 32$

G. $C = \frac{5}{9}F - 32$

H. $C = \frac{9}{5}F - 32$

18. Solve $\frac{x}{8} + \frac{y}{2} = 3$ for y.

A. $y = -0.5x + 3$

B. $y = -0.5x - 3$

C. $y = 0.5x + 3$

D. $y = -0.25x - 6$

E. $y = 0.5x - 3$

F. $y = 0.25x - 6$

G. $y = 0.25x + 6$

H. $y = -0.25x + 6$

19. A photograph with a length of 4 inches and a width of 6 inches needs to be enlarged. If the enlarged photograph has a width of 35 inches, what is the length of the enlarged photograph? If necessary, round your answer to the nearest tenth.

A. The enlarged photograph will have a length of 22.5 inches.

B. The enlarged photograph will have a length of 21.8 inches.

C. The enlarged photograph will have a length of 24 inches.

D. The enlarged photograph will have a length of 24.5 inches.

E. The enlarged photograph will have a length of 23.3 inches.

F. The enlarged photograph will have a length of 24.4 inches.

G. The enlarged photograph will have a length of 22.6 inches.

H. The enlarged photograph will have a length of 22 inches.

20. A boilermaker is a cocktail that consists of adding a shot of whiskey to beer. If you add a 2 oz shot of whiskey which is 86 proof (43 percent alchohol by volume) to 40 oz of beer which is 6 percent alcohol, what percentage of alcohol will your boilermaker have? Round your answer to the nearest tenth of a percent.

A. The boilermaker will contain 8.6 percent alcohol by volume.

B. The boilermaker will contain 7.9 percent alcohol by volume.

C. The boilermaker will contain 7.7 percent alcohol by volume.

D. The boilermaker will contain 7.5 percent alcohol by volume.

E. The boilermaker will contain 7.8 percent alcohol by volume.

F. The boilermaker will contain 8.5 percent alcohol by volume.

G. The boilermaker will contain 6.8 percent alcohol by volume.

H. The boilermaker will contain 6.9 percent alcohol by volume.

Answers

1. C.

2. A.

3. A.

4. C.

5. E.

6. A.

7. B.

8. F.

9. B.

10. E.

11. F.

12. B.

13. H.

14. D.

15. F.

16. H.

17. C.

18. H.

19. E.

20. E.