Cambridge • Coon Rapids AnokaRamsey Community College

Elementary Algebra Level Practice Test For Accuplacer

A. Operations with integers and rational numbers

1. What is the sum of $-\frac{1}{3}$ and $\frac{7}{9}$?

   a) $\frac{6}{12}$ b) $\frac{8}{12}$ c) $\frac{4}{9}$ d) $-\frac{4}{9}$

2. If -2 is added to the sum of -18 and 12, what is the new sum?

   a) 4 b) -8 c) 8 d) -4

3. Subtract -8 from -3.

   a) -11 b) 5 c) -5 d) -24

4. Lisa baked a pie and Steve ate $\frac{7}{15}$ of the pie. Later, Dave stopped by and ate $\frac{1}{5}$ of the remaining pie. What fraction of the original pie is left over?

   a) $\frac{2}{3}$ b) $\frac{3}{5}$ c) $\frac{13}{20}$ d) $\frac{1}{3}$

5. What is the product of $\frac{-5}{12}$ and $\frac{-1}{5}$?

   a) $\frac{-6}{17}$ b) $\frac{-1}{12}$ c) $\frac{1}{12}$ d) $\frac{-37}{60}$

6. Simplify $-56 \div (-7) \cdot (-3) \div (-3) \div (-2)$.

   a) 4 b) -4 c) -16 d) 16

7. If $4x = \frac{7}{9}$, then x equals?

a) $\frac{7}{13}$ b) $\frac{11}{9}$ c) $\frac{28}{9}$ d) $\frac{7}{36}$

8. If the area of a right triangle is 10 cm^2 and the height if 5 cm, what is the base of the right triangle?

a) 50 cm b) 4 cm c) 5 cm d) 2 cm

9. If $x = \left|-3-\left(-1\frac{3}{4}\right)\right|$, find x.

a) $4\frac{3}{4}$ b) $2\frac{3}{4}$ c) $-1\frac{1}{4}$ d) $1\frac{1}{4}$

10. If a consumer price index for fuel changed from -1.8 the first year to -0.4 the following year, which of the following represent the absolute value of the change from the first year to the second year?

a) $\left|-1.8-(-0.4)\right|$ b) $\left|-1.8-0.4\right|$ c) $\left|-0.4-1.8\right|$ d) $\left|0.4-(-1.8)\right|$

11. Arrange the numbers $\left\{\frac{2}{3}, \frac{9}{10}, \frac{5}{6}\right\}$ in decreasing order.

a) $\left\{\frac{2}{3}, \frac{5}{6}, \frac{9}{10}\right\}$ b) $\left\{\frac{9}{10}, \frac{5}{6}, \frac{2}{3}\right\}$ c) $\left\{\frac{2}{3}, \frac{9}{10}, \frac{5}{6}\right\}$ d) $\left\{\frac{5}{6}, \frac{9}{10}, \frac{2}{3}\right\}$

12. Sort the following numbers from least to greatest: $\{7, -3, 12, 8, -4\}$.

a) $\{-3, -4, 7, 8, 12\}$ b) $\{-4, -3, 7, 8, 12\}$ c) $\{12, 8, 7, -3, -4\}$ d) $\{12, 8, 7, -4, -3\}$

B. Operations with algebraic expressions

13. Evaluate the formula $y = 3x - 4$ for y if $x = 2$.

a) $y = 6$ b) $y = 1$ c) $y = 2$ d) $y = -1$

14. Simplify $3r-2(r+1)+r$.

a) $2r-2$ b) $4r-1$ c) $-2r+2$ d) $2r+1$

15. Simplify the following expression $2x+7-3x^2-4x+11-2x^2$.

a) $-5x^2-2x+18$ b) $-5x^4-2x^2+18$ c) $5x^2+2x-18$ d) $-x^2-6x+4$

16. Simplify the following expression $(6x^3-x^2+4)-(4x^3-2x^2+7x-3)$.

a) $2x^3-3x^2+7x+1$ b) $10x^3-3x^2+7x+1$ c) $2x^3+x^2+7x+1$ d) $2x^3+x^2-7x+7$

17. If $3^{2x}=9^x$, which of the following could be the value of x?

a) only 1 b) only 2 c) only 3 d) 1, 2 and 3

18. Which of the following is NOT equivalent to $\sqrt[4]{6^8}$?

a) 6^2 b) 36 c) 6^4 d) $6^{8/4}$

19. Simplify $\dfrac{x^2-2x-3}{x+1}$ as much as possible.

a) $x+3$ b) x^2-4 c) $x-3$ d) x^2-5

20. Simplify $\dfrac{1}{a}+\dfrac{2}{b}$ completely.

a) $\dfrac{2}{ab}$ b) $\dfrac{3}{ab}$ c) $\dfrac{2a+b}{ab}$ d) $\dfrac{3}{a+b}$

21. Simplify $6x + x + y$.

a) $6xy$ b) $6x + y$ c) $7x + y$ d) $7(x + y)$

22. Find the product of $(x-4)(x+3)$.

a) $x^2 + 7x + 12$ b) $x^2 + 12x - 1$ c) $x^2 - x - 12$ d) $x^2 - 7x - 7$

C. Equation solving, inequalities and word problems.

23. A family rented a car on a family vacation. The rental agency charged $29 per day and 38 cents per mile. They rented the car for three days and the total rental cost was $246.60. How many miles did they drive the rental car?

a) about 572 miles b) 420 miles c) 4.2 miles d) 855.4 miles

24. A rectangular football practice field is 2 times as long as it is wide. If the perimeter of the practice field is 300 yards, what are the field's dimensions?

a) 75 yds by 150 yds b) 50 yds by 100 yds c) 150 yds by150 yds d) 100 yds by 200 yds

25. The diameter of a tire for a racing bike is about 70 centimeters. If the wheel is turning at a rate of 3 revolutions per second, which expression could be used to approximate how far, in meters, the racer goes in one minute? Hint: 100cm = 1m

a) $\frac{70\pi(3)(60)}{100}$ b) $\frac{35\pi(3)(60)}{100}$ c) $70\pi(3)(60)$ d) $140\pi(3)(60)$

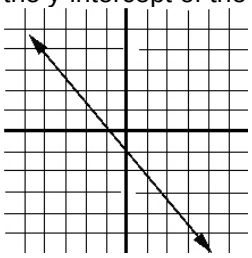
26. A town begins with 50 people in the year $t = 0$ and grows at a rate of 10 people per year. Write an equation for the number of people, P, in the town for any time t.

a) $P = 50t + 10$ b) $P = 10t - 50$ c) $P = 50t - 10$ d) $P = 10t + 50$

27. Write the word phrase, triple a number subtracted from 6, in symbols using variables.

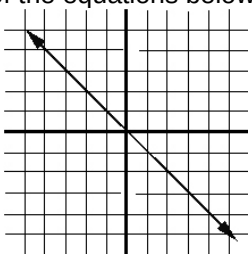
a) $6 - 3x$ b) $3x - 6$ c) $3(x - 2)$ d) $(3 - 6x)$

28. What is the y-intercept of the line in the given graph?



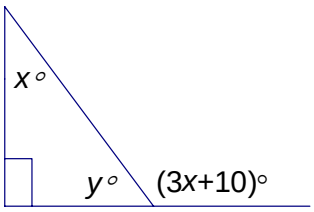
a) $(1,0)$ b) $(-1,0)$ c) $(0,1)$ d) $(0,-1)$

29. Which of the equations below describes the line in the picture?



a) $y = x+1$ b) $y = -x$ c) $y = x$ d) $x = y-1$

30. For the given figure, which of the following equations is NOT true.



a) $x = 40°$ b) $(3x+10)° + y° = 180°$ c) $x° + y° = 90°$ d) $x° = (3x+10)°$