

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 is 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) $|-1.8 - (-0.4)|$

b) $|-1.8 - 0.4|$

c) $|-0.4 - 1.8|$

d) $|0.4 - (-1.8)|$

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 $\frac{x^2 - 2x - 3}{x + 1}$ as much as possible.

a) $x + 3$

b) $x^2 - 4$

c) $x - 3$

d) $x^2 - 5$

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

a) $\frac{2}{ab}$

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

c) $\frac{2a+b}{ab}$

d) $\frac{3}{a+b}$

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 by 150 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) $140\pi(3)(60)$

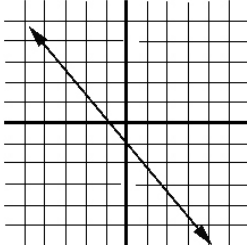
26. A town begins with 50 people in the year $t = 0$ and grows at a rate of 10 people per year. Write an equation for the number of people, P , in the town for any time t .

- 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.

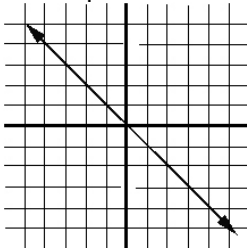
- a) $6 - 3x$ b) $3x - 6$ c) $3(x - 2)$ d) $(3 - 6x)$

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



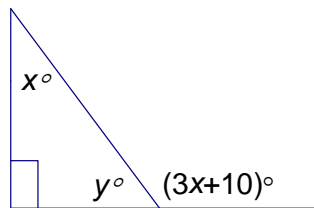
- a) (1,0) b) (-1,0) c) (0,1) d) (0,-1)

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) $x = 40^\circ$ b) $(3x+10)^\circ + y^\circ = 180^\circ$ c) $x^\circ + y^\circ = 90^\circ$ d) $x^\circ = (3x+10)^\circ$