

Patricia Cooke

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

1. Which of the following is equal to  $-2(x-5)$ ?

$$\begin{aligned} & -2(x-5) \\ & -2x + 10 \end{aligned}$$

- A.  $-2x+7$
- B.  $-2x-5$
- C.  $-2x+10$
- D.  $-2x-10$

2. 16 is what percent of 80?

- A. 12.8%
- B. 5%
- C. 23%
- D. 20%

$$\frac{16}{80} = 0.2$$

3. Which of the following is the smallest number? 7, 0, -10, -3

- A. -3
- B. 0
- C. -10
- D. 7

4. If  $x = -3$  then  $4x^2 - 3x - 10 =$

- A. 35.
- B. 143.
- C. 17.
- D. -55.

$$\begin{aligned} & 4x^2 - 3x - 10 \\ & 4(-3)^2 - 3(-3) - 10 \\ & 4(9) + 9 - 10 \\ & 36 - 1 \\ & = 35 \end{aligned}$$

5. What is 576 divided by 47? (Round the answer to three decimal places.)

- A. 12.463
- B. 13.642
- C. 11.953
- D. 12.255

$$576 \div 47$$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

6. If  $a = 4$  and  $b = -3$  then  $\frac{ab-4}{2b^2} =$

- A.  $\frac{-4}{9}$ .
- B.  $\frac{4}{9}$ .
- C.  $\frac{8}{9}$ .
- D.  $\frac{-8}{9}$ .

$$\frac{ab-4}{2b^2} = \frac{4(-3)-4}{2(-3)^2} = \frac{12-4}{2(9)} = \frac{8}{18}$$

?

7.  $8\sqrt{5} + 3\sqrt{5} - \sqrt{5} =$

- A. 11.
- B.  $10\sqrt{5}$ .
- C.  $11\sqrt{5}$ .
- D.  $11\sqrt{10} - \sqrt{5}$ .



8. Combine into a single expression:  $\frac{3}{x} + \frac{4}{y}$ .

- A.  $\frac{12}{xy}$
- B.  $\frac{7}{x+y}$
- C.  $\frac{3y+4x}{xy}$
- D.  $\frac{3y+4x}{x+y}$

$$\frac{3}{x} + \frac{4}{y}$$

$$\frac{3y+4x}{xy}$$

9. After dining at a restaurant John received a bill for \$42.38. He wanted to leave a 20% tip for the waiter. What should he have paid?

- A. \$ 8.48
- B. \$50.86
- C. \$51.67
- D. \$49.34

$$.20 \times 42.38 = 8.476$$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

10. Which property of real numbers is demonstrated by the following statement?

$$3 + (2 + 5) = (2 + 5) + 3$$

- A. The associative property of addition
- B. The commutative property of addition
- C. The distributive property
- D. The identity property of addition

11. Write 12% as a fraction in lowest terms.

A.  $\frac{6}{50}$

B.  $\frac{1}{8}$

C.  $\frac{1}{5}$

D.  $\frac{3}{25}$

$$\frac{12}{100} = \frac{3}{25}$$

12. Which of the following is true of the two numbers  $-\frac{1}{5}$  and .20?

- A. They are equal.
- B. The first is larger than the second.
- C. Their sum is 0.
- D. Their product is 1.

$$-\frac{1}{5} + \frac{20}{100}$$

13. Which of the following is a factor of  $x^3 + x^2 - 6x$ ?

- A.  $x - 1$
- B.  $x - 6$
- C.  $x + 3$
- D.  $x + 2$

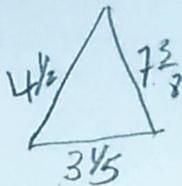
$$x^3 + x^2 - 6x$$

14. Which is the scientific notation for 3,140,000?

- A.  $3.14 \times 10^6$
- B.  $3.14 \times 10^{-6}$
- C.  $.314 \times 10^7$
- D.  $3.14 \times 10^{-6}$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

15. The perimeter of a triangle is the sum of its sides. What is the perimeter of a triangle having sides of length  $4\frac{1}{2}$  inches,  $7\frac{3}{8}$  inches and  $3\frac{1}{5}$  inches?



- A. 14.502 inches
- B. 15.075 inches
- C. 16.341 inches
- D. 15.224 inches

16. Which of the following is point on the graph of  $y = 4x - 1$ ?

- A.  $(-2, -7)$
- B.  $(-1, -5)$
- C.  $(3, 13)$
- D.  $(2, 9)$

17. Which of the following is equal to  $(x^2 - 2xy + y^2) - (2x^2 + 3xy + y^2)$ ?

- A.  $-x^2 + xy$
- B.  $3x^2 - 5xy + 2y^2$
- C.  $-x^2 - 5xy$
- D.  $-x^2 - 5xy + 2y^2$

$$-x^2 + xy$$

18. Carrie has  $n$  nickels and  $d$  dimes. Which of the following represents the total amount of her money in cents?

- A.  $5n + 10d$
- B.  $15(n + d)$
- C.  $15nd$
- D.  $n + d$

19. Which of the following is the difference of two squares?

- A.  $(2a - b) - (2a + b)$
- B.  $(25x - 16y)$
- C.  $4a^2 + b^2$
- D.  $4m^2 - n^2$

9

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

20. Factor:  $3xy + 6x^2$ .

- A.  $3x(y + 2x^2)$
- B.  $3x(y + 2x)$
- C.  $3xy(1 + 6x^2)$
- D.  $3x(y + x)$

$$\frac{3xy + 6x^2}{3} = xy + 2x^2$$

$$3xy + 2x$$

21. 75 is approximately what percent of 70?

- A. 79
- B. 107
- C. 107
- D. 93

$$\frac{75}{70} = 1.071$$

22. Multiply:  $(3x + 2y)^2$ .

- A.  $9x + 4y$
- B.  $25x^2y^2$
- C.  $9x^2 + 6xy + 4y^2$
- D.  $9x^2 + 12xy + 4y^2$

$$(3x + 2y)^2 = (3x + 2y)(3x + 2y)$$

$$9x^2 + 6xy + 6xy + 4y^2$$

$$9x^2 + 12xy + 4y^2$$

23. Multiply:  $(5a + 4)(7a - 4)$ .

- A.  $12a$
- B.  $35a^2 - 16$
- C.  $35a^2 + 8a - 16$
- D.  $35a^2 - 48a - 16$

$$(5a + 4)(7a - 4)$$

$$35a^2 - 20a + 28a - 16$$

$$35a^2 + 8a - 16$$

24. In which quadrant would the graph of  $(-5, -4)$  be found?

- A. Quadrant I
- B. Quadrant II
- C. Quadrant III
- D. Quadrant IV



25. Find a number that when added to  $-7$  will yield 17.

- A. 10
- B. 24
- C.  $-10$
- D. None of these.

$$x + (-7) = 17$$

$$\frac{x}{+7} = \frac{17}{7}$$

$$x = 24$$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

26. Which of the following is the x-intercept of the graph of  $y = 8 - 2x$ ?

- A. (0, -4)
- B. (4, 0)
- C. (0, -8)
- D. (8, 0)

27. Simplify:  $\frac{15}{16} \div \frac{7}{4}$ .

(A)  $\frac{15}{28}$

B.  $\frac{105}{64}$

C.  $\frac{43}{16}$

D.  $\frac{22}{16}$

$$\frac{15}{16} \div \frac{7}{4} = \frac{15}{16} \times \frac{4}{7} = \frac{15}{28}$$

28. Simplify:  $x^5 \cdot x^{-1} \cdot x^0$ .

- A. 1
- B.  $x^{-5}$
- (C)  $x^4$
- D.  $x^6$

$$x^5 \cdot x^{-1} \cdot x^0 = x^4$$

$$= 5 - 1 = 4$$

29. Which of the following is greatest?

(A)  $\frac{2}{3} = 0.666$

B.  $\frac{5}{12} = 0.416$

C.  $\frac{1}{2} = 0.50$

D.  $\frac{3}{8} = 0.375$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

30. Bill purchased a car and made a down payment of \$560. If the down payment was  $\frac{1}{5}$  of the purchase price, what was the purchase price?

- A. \$112
- B. \$2,240
- C. \$2,800
- D. \$4,480

$$560 \times \frac{1}{5} = 2800$$

31. Of the following, which is closest to  $\sqrt{4,000}$ ?

- A. 40
- B. 60
- C. 200
- D. 2,000

$$60 \times 60 = 3600$$

32. If  $x = 4$  and  $y = -2$ , then  $(x^2y - xy^2) =$

- A. 48.
- B. 16.
- C. -16.
- D. -48.

$$\begin{aligned} x^2y - xy^2 &= \\ 4^2(-2) - 4(-2)^2 &= \\ 16(-2) - 4(4) &= \\ -32 - 16 &= -48 \end{aligned}$$

33. If  $2x + 3(x - 2) = 30$ , then  $x =$

- A.  $\frac{5}{36}$
- B.  $\frac{24}{5}$
- C.  $\frac{32}{5}$
- D.  $\frac{36}{5}$

$$\begin{aligned} 2x + 3(x - 2) &= 30 \\ 2x + 3x - 6 &= 30 \\ 5x - 6 &= 30 \\ +6 &= +6 \\ \frac{5x}{5} &= \frac{36}{5} \end{aligned}$$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

34.  $\frac{5}{a} + \frac{7}{b} =$

A.  $\frac{12}{a+b}$

B.  $\frac{12}{ab}$

C.  $\frac{5b+7a}{a+b}$

D.  $\frac{5b+7a}{ab}$

$$\frac{5}{a} + \frac{7}{b}$$

$$\frac{5b+7a}{ab}$$

35.  $23.5 \times 3.04 =$

A. 714.4.

B. 79.9.

C. 71.44.

D. 7.99.

$$23.5 \times 3.04 = 71.44$$

36.  $\frac{3}{4} - \frac{1}{2} + \frac{2}{5} =$

A.  $\frac{3}{20}$

B.  $\frac{4}{11}$

C.  $\frac{4}{7}$

D.  $\frac{13}{20}$

$$\left(\frac{3}{4} - \frac{1}{2}\right) + \frac{2}{5} = \frac{3 \cdot 2 - 1 \cdot 4}{4 \cdot 2} + \frac{2}{5} = \frac{6 - 4}{8} + \frac{2}{5} = \frac{2}{8} + \frac{2}{5} = \frac{1}{4} + \frac{2}{5} = \frac{5}{20} + \frac{8}{20} = \frac{13}{20}$$

37. One factor of  $3a^2 - 13a - 10$  is

A.  $(3a+2)$

B.  $(3a-5)$

C.  $(a+2)$

D.  $(a+5)$

$$3a^2 - 13a - 10$$

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

38. If  $A$  represents the number of apples purchased at 15 cents each and  $B$  represents the number of bananas purchased at 10 cents each, which of the following represents the total purchase price in cents?

- A.  $25AB$
- B.  $25(A+B)$
- C.  $15A+10B$
- D.  $A+B$

39. Simplify:  $\frac{3[7-2(5+4)]}{8-6 \div 2}$

$$= \frac{3[7-2(5+4)]}{8-3} = \frac{3[7-2(9)]}{5} = \frac{3[7-18]}{5} = \frac{3(-11)}{5} = \frac{-33}{5}$$

- A.  $\frac{-33}{5}$
- B. 135
- C. 27
- D.  $\frac{15}{7}$

40.  $\sqrt{18} + \sqrt{8} =$

- A.  $\sqrt{26}$
- B.  $5\sqrt{2}$
- C. 10.
- D. 12.

$$\begin{aligned} \sqrt{18} + \sqrt{8} &= \\ 3\sqrt{2} + 2\sqrt{2} &= \\ 5\sqrt{2} & \end{aligned}$$