

Grace Boaty

COMPUTATION AND ELEMENTARY ALGEBRA PRETEST

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

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

$$-2x + 10$$

2. 16 is what percent of 80?

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

$$\frac{16}{80} = \frac{16 \times 100}{80 \times 100}$$

$$16 \div 80 \times 100 = \frac{16 \times 100}{80} \times \frac{1}{100} = 20$$

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

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

$$-10, -3, 0, 7$$

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

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

$$4(-3)^2 - 3(-3) - 10$$

$$4(9) + 9 - 10 = 35$$
$$36 - 1 = 35$$

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

$$4 \overline{) 576}$$

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

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

$a=4$
 $b=-3$

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

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

$8\sqrt{5} + 3\sqrt{5} - \sqrt{5} = 10\sqrt{5}$

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

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

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

$20 \times 42.38 = 8.476$
 8.48

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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. $\frac{3}{25}$

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

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.

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

$3,140,000$
 3.14×10^6

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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. $(2, 9)$
- $y = mx + b$
 $m = 4$
 $b = -1$

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. $n + d$
- $5n + 10d$

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. $4m^2 - n^2$

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

A. $3x(y + 2x^2)$

B. $3x(y + 2x)$

C. $3xy(1 + 6x^2)$

D. $3x(y + x)$

$$3x \left(\frac{3xy}{3x} + \frac{6x^2}{3x} \right)$$

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

21. 75 is approximately what percent of 70?

A. 79

B. 1.07

C. 107

D. 93

$$\frac{70}{75} \times \frac{100}{100} = \frac{70 \times 100}{75} \times \frac{1}{100} = 93.3\bar{3}$$

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

A. $9x + 4y$

B. $25x^2y^2$

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

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

$$(3x)^2 + 2 \times 3x \times 2y + (2y)^2$$

$$9x^2 + 2 \times 3x \times 2y + 4y^2$$

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

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

A. $12a$

B. $35a^2 - 16$

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

D. $35a^2 - 48a - 16$

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

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

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

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.

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

$$\frac{x}{+7} = 7 \text{ #add}$$

$$x = 24$$

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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. $(8, 0)$

$$8 - 2x = 0$$

$$8 - 2x = 0$$

$$-2x = -8$$

$$\frac{-8}{-2} = \frac{-8}{-2}$$

$$x = 4$$

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

- A. $\frac{15}{28}$
- B. $\frac{105}{64}$
- C. $\frac{43}{16}$
- D. $\frac{22}{16}$

$$\frac{15}{16} \times \frac{4}{7} = \frac{15 \times 4}{16 \times 7} = \frac{60}{112} = \frac{60}{112}$$

$$\text{Ans} = \frac{15}{28}$$

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

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

$$x^5 x^{-1} \times 1$$

$$x^5 x^{-1}$$

$$x^{5-1} = 5-1 = 4$$

$$x^4$$

29. Which of the following is greatest?

- A. $\frac{2}{3} = 0.6667$
- B. $\frac{5}{12} = 0.416$
- C. $\frac{1}{2} = 0.5$
- D. $\frac{3}{8} = 0.375$

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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

$$560 \times 5 = 2800$$

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.

$$\begin{aligned} x &= 4 \\ y &= -2 \end{aligned}$$

$$x^2y - xy^2$$

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

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

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

$$2x + 3(x - 2) = 30$$

$$2x + 3x + 6 = 30$$

$$5x = 30 + 6$$

$$\begin{aligned} \frac{5x}{5} &= \frac{36}{5} \\ x &= \frac{36}{5} \end{aligned}$$

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

- A. $\frac{12}{a+b}$
- B. $\frac{12}{ab}$
- C. $\frac{5b+7a}{a+b}$
- D. $\frac{5b+7a}{ab}$

35. $23.5 \times 3.04 =$
- A. 714.4.
 - B. 79.9.
 - C. 71.44.
 - D. 7.99.

23.5×3.04
 $= 71.44$

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

- A. $\frac{3}{20}$
- B. $\frac{4}{11}$
- C. $\frac{4}{7}$
- D. $\frac{13}{20}$

$= \frac{5}{20} + \frac{8}{20} = \frac{13}{20}$

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

- A. $(3a+2)$
- B. $(3a-5)$
- C. $(a+2)$
- D. $(a+5)$

$a(3a+2) - 5(3a+2)$
 $(3a+2)(a-5)$
 $\frac{3a+2}{3}$

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

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

multiplication

$$\frac{3[7-2(9)]}{8+\frac{-6}{2}} = 3\frac{[7-18]}{8+\frac{-6}{2}} = 3\frac{[-11]}{8+\frac{-6}{2}} = \frac{-33}{8+\frac{-6}{2}}$$

Divide = $\frac{-33}{8-3}$ sub $\frac{-33}{5} = -\frac{33}{5}$

40. $\sqrt{18} + \sqrt{8} =$
- A. $\sqrt{26}$
 - B. $5\sqrt{2}$
 - C. 10.
 - D. 12.

$$\begin{aligned} & 3\sqrt{2} + 2\sqrt{2} \\ & \underline{3\sqrt{2} + 2\sqrt{2}} \\ & 5\sqrt{2} \end{aligned}$$