

Algebra 1 Individual Test

January 8, 1994

Directions: Answer the following questions and fill in the bubble for the correct answer on your answer sheet. If the correct answer is not listed, mark "e" for none of the above. You have 60 minutes to complete this test.

1. Evaluate $\frac{x+y}{4} + \frac{x-y}{4}$ for $x = -12$ and $y = 8$.

- a. -6 b. -2 c. 2 d. 6 e. nota

2. The sum of two numbers, $a + b$, is 24, and the product of these numbers, ab , is 128. Find the absolute value of their difference.

- a. -8 b. 0 c. 8 d. 24 e. nota

3. Simplify: $\frac{3(4ab)(5)}{2(3a)(4b)}$

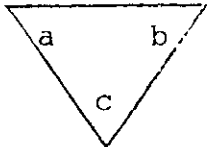

- a. $5/2$ b. $5ab/2$ c. $5(2ab)$ d. $2/5$ e. nota

4. Evaluate $(x^2)^{-2}$ if $x = 3$

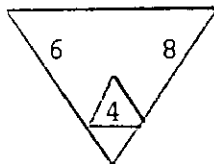
- a. -81 b. $-1/81$ c. $1/81$ d. 81 e. nota

5. Express as a mixed number: $1 + \frac{1}{1 + \frac{1}{1 + \frac{2}{3}}}$

- a. $1 \frac{3}{8}$ b. $1 \frac{5}{8}$ c. $2 \frac{3}{5}$ d. $2 \frac{3}{32}$ e. nota

6. If  $= \frac{ab}{c}$ and  $= a^2$

find



- a. 3 b. 6 c. 9 d. 12 e. nota

7. Simplify: $n - \{2n - [3n - (4n - 5n) - 6n] - 7n\} - 8n$
a. $-4n$ b. $-2n$ c. 0 d. $2n$ e. nota
8. If $\frac{20}{30} = \sqrt{\frac{20}{n}}$ find $3n$
a. 18 b. 30 c. 45 d. 81 e. nota
9. Express $0.\overline{63} - 0.\overline{27}$ as a common fraction
a. $9/25$ b. $2/5$ c. $4/11$ d. $36/89$ e. nota
10. Evaluate $\frac{3|x| + |y| - z}{2x - |y|}$
for $x = -5$, $y = -3$, and $z = -4$.
a. $-22/13$ b. $-14/13$ c. $14/13$
d. $22/13$ e. nota
11. Simplify: $8x - (-2x) - 14 - (-5x) + 53$
a. $15x + 39$ b. $x + 39$ c. $15x + 67$
d. $x + 67$ e. nota
12. Solve: $4a + 5a - 2(2a) + 35 = 0$
a. 7 b. $33/7$ c. $-33/7$ d. -7 e. nota
13. The price of a CD is \$16. After sales tax is added the price is \$16.88. What is the sales tax rate?
a. 5% b. 5.5% c. 6% d. 6.5% e. nota
14. The number of males in a club is 10 more than half the number of females. There are 30 males. Altogether how many males and females are there in the club?
a. 30 b. 40 c. 70 d. 140 e. nota
15. Solve: $3(r - 6) + 2 = 4(r + 2) - 21$
a. -3 b. 3 c. 15 d. 0 e. nota

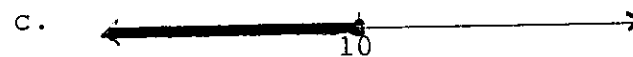
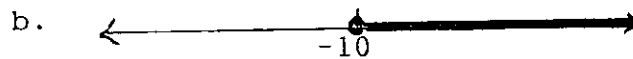
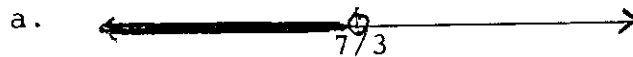
16. In a basketball league the Falcons won 15 of their first 20 games. If from this point on they win only half their remaining games and end the season having won 60% of their games, what is the total number of games that the Falcons played?

- a. 30 b. 50 c. 70 d. 80 e. nota

17. Solve for b in terms of a , c , and x : $ax + b = cb$

- a. $c - ax$ b. $\frac{ax}{2b}$ c. $\frac{ax}{1 - c}$ d. $\frac{ax}{c - 1}$ e. nota

18. Which graph represents the solution set for $0.3(10 - 2y) \leq 9$



- e. nota

19. Solve $(5/16)n + (3/8)n = 2 + (1/4)n$

- a. $32/15$ b. $32/7$ c. $16/7$ d. $7/16$ e. nota

20. Simplify: $\left(\frac{-5p^4q^3}{2}\right)^3$

- a. $-125p^{12}q^9/8$ b. $-125p^7q^6/8$ c. $-5p^{12}q^9/2$
 d. $-5p^7q^6/2$ e. nota

21. Find the slope of the line that goes through the points $(6, -4)$ and $(6, 5)$

- a. -9 b. 0 c. 9 d. no slope

e. nota

22. Subtract: $(5x^4 + 6x^3 - 9x^2) - (-6x^4 - 6x^3 + 8x)$

a. $11x^4 + 12x^3 - 9x^2 - 8x$

b. $-x^4 + 12x^3 - 9x^2 - 8x$

c. $11x^8 - 9x^2 - 8x$

d. $11x^4 - 9x^2 + 8x$

e. nota

23. Let $A = \{3, 6, 9, 12\}$

$B = \{1, 3, 5, 7, 9, 11\}$

$C = \{2, 4, 6, 8, 10\}$

Universal Set = $\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

Find $[(A \cup B) \cap C]'$

a. $\{6\}$

b. $\{2, 3, 4, 6, 8, 9, 10\}$

c. $\{0, 1, 5, 7, 11, 12\}$

d. $\{0, 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12\}$

e. nota

24. Simplify: $\sqrt{108} - \sqrt{50} + \sqrt{48} + \sqrt{2}$

a. $6\sqrt{3}$

b. $2\sqrt{2}$

c. $10\sqrt{3} - 4\sqrt{2}$

d. $10\sqrt{3} - 5\sqrt{2}$

e. nota

25. Factor completely: $x^4 - 8x^2 + 16$

a. $(x^2 - 8)^2$

b. $(x^2 - 8)(x - 4)(x + 4)$

c. $(x^2 + 4)(x - 2)(x + 2)$

d. $(x - 2)^2(x + 2)^2$

e. nota

26. Find $x + y$ when $3x = -8y$ and $2x = 3y - 5$

a. 1

b. $-3/5$

c. $3/5$

d. -1

e. nota

27. Determine the equation of the line going through point $(4, -2)$ with slope $-1/2$.

a. $x + 2y = 0$

b. $x - 2y = 0$

c. $x + 2y = 2$

d. $x - 2y = 2$

e. nota

28. Simplify: $\frac{5x - 10}{5} - \frac{2x - 4}{2} + \frac{3x + 9}{-3}$

- a. $x + 3$ b. $x - 3$ c. $-x + 3$ d. $-x - 3$
e. nota

29. What is the units digit in 37^{37} ?

- a. 1 b. 3 c. 7 d. 9 e. nota

30. Which set is closed under division?

- a. $\{2, 4, 6, \dots\}$ only
b. $\{-1, 1\}$ only
c. $\{1/2, 1, 2\}$ only
d. choices a and b
e. choices b and c