

Name \_\_\_\_\_

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Name the set using the roster method.

- 1) The set of multiples of 3 between 10 and 16  
 A) {10, 12, 15, 16}      B)  $\emptyset$       C) {11, 13, 14}      D) {12, 15}      1) \_\_\_\_\_

Classify the statement as true or false.

- 2)  $8 \in \{6, 8, 10, 12\}$   
 A) True      B) False      2) \_\_\_\_\_

- 3)  $\{8\} \subseteq \{6, 8, 10, 12\}$   
 A) True      B) False      3) \_\_\_\_\_

- 4)  $\{7, 10\} \subseteq \{8, 10, 12, 14\}$   
 A) True      B) False      4) \_\_\_\_\_

Find the intersection.

- 5)  $\{b, c, d, e, f\} \cap \{g, h, i, j, k\}$   
 A) {b, c, d, e, f}      B)  $\emptyset$   
 C) {f, g}      D) {b, c, d, e, f, g, h, i, j, k}      5) \_\_\_\_\_

- 6)  $\{2, 3, 6, 9\} \cap \{4, 7, 10, 11\}$   
 A) {0}      B) {3}      C) {2, 4}      D)  $\emptyset$       6) \_\_\_\_\_

Find the union.

- 7)  $\{3, 5, 7, 13\} \cup \{0, 3, 8, 13\}$   
 A) {0, 3, 5, 7, 8, 13}      B) {0, 3, 5, 7, 13}      C) {3, 5, 7, 8, 13}      D) {3, 13}      7) \_\_\_\_\_

- 8)  $\{0, 3, 9, 12\} \cup \{a, b\}$   
 A)  $\emptyset$       B) {a, b}      C) {0, 3, 9, 12, a, b}      D) {0, 3, 9, 12}      8) \_\_\_\_\_

List the elements in the set .

Let  $U = \{q, r, s, t, u, v, w, x, y, z\}$

$A = \{q, s, u, w, y\}$

$B = \{q, s, y, z\}$

$C = \{v, w, x, y, z\}$ .

- 9)  $B \cap C$   
 A) {y}      B) {y, z}  
 C) {q, s, v, w, x, y, z}      D) {w, y, z}      9) \_\_\_\_\_

- 10)  $A \cap B'$   
 A) {q, s, t, u, v, w, x, y}      B) {u, w}  
 C) {r, s, t, u, v, w, x, z}      D) {t, v, x}      10) \_\_\_\_\_

- 11)  $(A \cup B)'$  11) \_\_\_\_\_  
A) {t, v, x} B) {s, u, w}  
C) {r, t, v, x} D) {r, s, t, u, v, w, x, z}

Decide whether or not the following is a statement.

- 12) Not all flowers are roses. 12) \_\_\_\_\_  
A) Not a statement B) Statement
- 13) My favorite baseball team will win the pennant. 13) \_\_\_\_\_  
A) Not a statement B) Statement

Decide whether the statement is compound.

- 14) Computers are very helpful to people. 14) \_\_\_\_\_  
A) Compound B) Not compound
- 15) Today is not Sunday. 15) \_\_\_\_\_  
A) Not compound B) Compound

Convert the symbolic compound statement into words.

- 16) p represents the statement "Her name is Lisa."  
q represents the statement "She lives in Chicago."  
Translate the following compound statement into words: 16) \_\_\_\_\_  
 $\sim p$   
A) She does not live in Chicago. B) Her name is Teresa.  
C) It is true her name is Lisa. D) Her name is not Lisa.

- 17) p represents the statement "Her name is Lisa."  
q represents the statement "She lives in Chicago."  
Translate the following compound statement into words: 17) \_\_\_\_\_  
 $p \wedge q$   
A) Her name is Lisa or she lives in Chicago.  
B) Her name is Lisa and she lives in Chicago.  
C) Her name is Lisa and she doesn't live in Chicago.  
D) If her name is Lisa, she lives in Chicago.

- 18) p represents the statement "It's Monday."  
q represents the statement "It's raining today."  
Translate the following compound statement into words: 18) \_\_\_\_\_  
 $\sim p \wedge \sim q$   
A) It's not Monday or it's not raining today.  
B) It's not the case that it's Monday and raining today.  
C) It's not Monday and it's not raining today.  
D) It's Monday or it's raining today.

Let p represent the statement, "Jim plays football", and let q represent the statement "Michael plays basketball". Convert the compound statement into symbols.

19) Jim does not play football and Michael does not play basketball. 19) \_\_\_\_\_  
 A)  $\sim p \wedge q$                       B)  $\sim(p \wedge q)$                       C)  $\sim p \wedge \sim q$                       D)  $\sim p \vee \sim q$

20) Jim does not play football and Michael plays basketball. 20) \_\_\_\_\_  
 A)  $\sim p \vee q$                       B)  $\sim p \wedge q$                       C)  $p \wedge q$                       D)  $\sim(p \wedge q)$

Evaluate.

21)  $\frac{p}{q}$ , when  $p = 27$  and  $q = 3$  21) \_\_\_\_\_  
 A) 8                      B)  $9\frac{1}{3}$                       C) 10                      D) 9

22)  $\frac{x+y}{11}$ , when  $x = 15$  and  $y = 29$  22) \_\_\_\_\_  
 A) 5                      B) 3                      C) 4                      D) 2

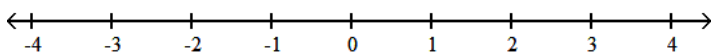
Translate the phrase to an algebraic expression.

23) Two less than x 23) \_\_\_\_\_  
 A)  $2x$                       B)  $x - 2$                       C)  $\frac{2}{x}$                       D)  $2 - x$

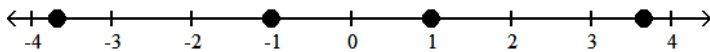
24) The quotient of x divided by seven 24) \_\_\_\_\_  
 A)  $7x$                       B)  $7 + x$                       C)  $7 - x$                       D)  $\frac{x}{7}$

Graph the numbers on a number line.

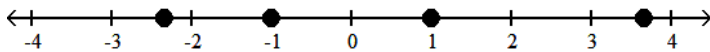
25)  $-3\frac{2}{3}$ ,  $-1$ ,  $1$ ,  $3\frac{2}{3}$  25) \_\_\_\_\_



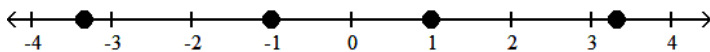
A)



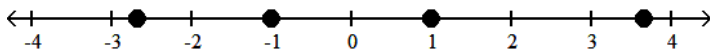
B)



C)



D)



Find the absolute value.

26)  $|-23|$

A) -23

B) 46

C) 23

D) 0

26) \_\_\_\_\_

Add. Do not use a number line except as a check.

27)  $-2.3 + (-7.6)$

A) 5.3

B) -5.3

C) 9.9

D) -9.9

27) \_\_\_\_\_

28)  $-1.2 + (-4.7) + 3.5$

A) 0

B) -9.4

C) -2.4

D) 7

28) \_\_\_\_\_

29)  $-\frac{4}{7} + \frac{3}{7}$

A) 1

B) -1

C)  $-\frac{1}{7}$

D)  $\frac{1}{7}$

29) \_\_\_\_\_

30)  $-\frac{4}{6} + \frac{2}{3}$

A) 1

B)  $-\frac{4}{3}$

C)  $\frac{4}{3}$

D) 0

30) \_\_\_\_\_

31)  $-\frac{2}{5} + \frac{2}{15}$

A)  $-\frac{8}{15}$

B)  $-\frac{4}{15}$

C)  $\frac{8}{15}$

D)  $\frac{4}{15}$

31) \_\_\_\_\_

Subtract.

32)  $\frac{5}{8} - \frac{1}{16}$

A)  $\frac{1}{4}$

B)  $\frac{11}{16}$

C)  $\frac{1}{2}$

D)  $\frac{9}{16}$

32) \_\_\_\_\_

33)  $\frac{5}{8} - \left(-\frac{3}{4}\right)$

A)  $\frac{11}{8}$

B)  $-\frac{1}{8}$

C)  $-\frac{1}{4}$

D)  $-\frac{11}{8}$

33) \_\_\_\_\_

Multiply.

34)  $-0.7 \cdot 4.41$

A) 3.71

B) 3.087

C) -3.087

D) 5.11

34) \_\_\_\_\_

35)  $1.9 \cdot (-6.5)$

A) 8.4

B) -12.35

C) 8.5

D) -4.6

35) \_\_\_\_\_

36)  $\left(\frac{9}{2}\right)\left(-\frac{7}{4}\right)$  36) \_\_\_\_\_  
 A)  $\frac{1}{3}$  B)  $-\frac{63}{8}$  C)  $-\frac{9}{8}$  D)  $-\frac{7}{18}$

37)  $\left(-\frac{4}{5}\right)\left(\frac{1}{3}\right)$  37) \_\_\_\_\_  
 A)  $-\frac{5}{12}$  B)  $-\frac{4}{15}$  C)  $-\frac{5}{2}$  D)  $-\frac{1}{3}$

Divide, if possible.

38)  $-72 \div (-9)$  38) \_\_\_\_\_  
 A) 8 B) -9 C) 9 D) -8

39)  $-198 \div 9$  39) \_\_\_\_\_  
 A) -32 B) 22 C)  $-\frac{1}{22}$  D) -22

Divide.

40)  $\frac{3}{8} \div \left(-\frac{9}{5}\right)$  40) \_\_\_\_\_  
 A)  $-\frac{27}{40}$  B)  $-\frac{24}{5}$  C)  $-\frac{40}{27}$  D)  $-\frac{5}{24}$

41)  $\frac{1}{3} \div \left(-\frac{5}{6}\right)$  41) \_\_\_\_\_  
 A)  $-\frac{18}{5}$  B)  $-\frac{2}{5}$  C)  $-\frac{5}{2}$  D)  $-\frac{5}{18}$

Simplify.

42)  $[5(x - 4) - 7] + [9(x - 1) + 9]$  42) \_\_\_\_\_  
 A)  $14x - 27$  B)  $14x - 7$  C)  $14x - 11$  D)  $5x - 36$

43)  $2\{[8(x - 1) + 7] - [2(4x - 1) + 7]\}$  43) \_\_\_\_\_  
 A)  $32x - 12$  B)  $16x - 6$  C) -12 D) 0

Multiply.

44)  $9 \cdot (-2) \cdot 10 \cdot (-18)$  44) \_\_\_\_\_  
 A) -3240 B) 3240 C) -1 D) -162

Simplify.

45)  $2 + 3^2(16) - (-26)$  45) \_\_\_\_\_  
 A) 54 B) 47 C) 202 D) 172

Answer Key

Testname: UNTITLED1

- 1) D
- 2) A
- 3) A
- 4) B
- 5) B
- 6) D
- 7) A
- 8) C
- 9) B
- 10) B
- 11) C
- 12) B
- 13) A
- 14) B
- 15) B
- 16) D
- 17) B
- 18) C
- 19) C
- 20) B
- 21) D
- 22) C
- 23) B
- 24) D
- 25) A
- 26) C
- 27) D
- 28) C
- 29) C
- 30) D
- 31) B
- 32) D
- 33) A
- 34) C
- 35) B
- 36) B
- 37) B
- 38) A
- 39) D
- 40) D
- 41) B
- 42) A
- 43) C
- 44) B
- 45) D