Chapter 0 Algebraic Concepts 2

Sections 1-2

1. Use $\in$ or $\notin$ in blank place to indicate whether the given object is an element of the given set.
   $6 \_\_\_ \{1,2,3,4,5,6\}$
   A) $6 \in \{1,2,3,4,5,6\}$
   B) $6 \notin \{1,2,3,4,5,6\}$
   Ans: A

2. Use $\in$ or $\notin$ in blank place to indicate whether the given object is an element of the given set.
   $4 \_\_\_\_ \{x : x \text{ is a natural greater than } 4\}$
   A) $4 \in \{x : x \text{ is a natural number greater than } 4\}$
   B) $4 \notin \{x : x \text{ is a natural number greater than } 4\}$
   Ans: B

3. Use $\in$ or $\notin$ in blank place to indicate whether the given object is an element of the given set.
   $7 \_\_\_\_ \{x : x \text{ is a natural number less than } 7\}$
   A) $7 \in \{x : x \text{ is a natural number less than } 7\}$
   B) $7 \notin \{x : x \text{ is a natural number less than } 7\}$
   Ans: B

4. Use $\in$ or $\notin$ in blank place to indicate whether the given object is an element of the given set.
   $5 \_\_\_\_ \varnothing$
   A) $5 \in \varnothing$
   B) $5 \notin \varnothing$
   Ans: B

5. Write the following set a second way.
   $\{x : x \text{ is a natural number greater than 11 and less than 15}\}$
   A) $\{11,12,13,14\}$
   B) $\{11,12,13\}$
   C) $\{12,13,14\}$
   D) $\{12,13,14,15\}$
   E) $\{10,11,12,13\}$
   Ans: C

6. Write the following set a second way.
$\{5, 6, 7, 8, ...\}$

A) $\{x : x \text{ is a natural number greater than 4 and less than 9}\}$

B) $\{x : x \text{ is a natural number greater than 5 and less than 8}\}$

C) $\{x : x \text{ is a natural number greater than 6}\}$

D) $\{x : x \text{ is a natural number greater than 5}\}$

E) $\{x : x \text{ is a natural number greater than 4}\}$

Ans: E

7. If $A = \{a, b, c, d\}$ and $B = \{c, a, b, d\}$, is A a subset of B?

A) yes
B) no
Ans: A

8. Is $A \subseteq B$ if $A = \{1,\ 4,\ 5,\ 12\}$ and $B = \{1,\ 4,\ 5,\ 13,\ 18,\ 22\}$?

A) yes
B) no
Ans: B

9. Use $\subseteq$ notation to indicate which of the sets E and F is a subset of the other.
$E = \{y, x, a, d\}$, $F = \{a, 6, x, d, 2, y\}$

A) $F \subseteq E$
B) $E \subseteq F$
C) $E \subseteq U$
D) $F \subseteq E$ and $E \subseteq F$
E) $F \supseteq E$ and $F \subseteq E$
Ans: B

10. Use $\subseteq$ notation to indicate all containment relations between the following two sets.
$D = \{a, e, 1, 3, c\}$, $F = \{1, a, c, e, 3\}$

A) $F \supseteq D$
B) $D \subseteq U$
C) $D \supseteq F$
D) $D \subseteq F$ and $F \subseteq D$
E) $D \subseteq F$ and $F \supseteq D$
Ans: D

11. Indicate whether the following sets are equal.
$A = \{x, h, a, n\}$, $D = \{x, a, b, y\}$

A) $A \neq D$
B) $A = D$
Ans: A

12. Indicate whether the following sets are equal.
$F = \{x : x \text{ is a natural number greater than } 7\}$, $G = \{8,9,10,...\}$

A) $F = G$
B) $F \neq G$
Ans: A

13. If the sets A and B are nonempty and disjoint, what does $A \cap B$ equal?
A) $\varnothing$
B) $A \cap A'$
C) A
D) B
E) $A \cup B'$
Ans: A

14. Find $A \cap B$, the intersection of sets *A* and *B*.
$A = \{2,3,4,5,6\}$ and $B = \{4,6,8,10,12\}$

A) $A \cap B = \{4,5,7,9,11\}$
B) $A \cap B = \{3,5\}$
C) $A \cap B = \{4,6,8,10,12\}$
D) $A \cap B = \{2,3,4,5,6\}$
E) $A \cap B = \{4,6\}$
Ans: E

15. Find $A \cap B$, the intersection of sets *A* and *B*.
$A = \{a,\ b,\ c,\ d,\ e\}$ and $B = \{c,\ h,\ d,\ g,\ e,\ r\}$

A) $A \cap B = \{h,\ g,\ r\}$
B) $A \cap B = \{c,\ d,\ e\}$
C) $A \cap B = \{c,\ h,\ d\}$
D) $A \cap B = \{g,\ e,\ r\}$
E) $A \cap B = \{c,\ e,\ r\}$
Ans: B

16. Find $A \cap B$, the intersection of sets *A* and *B*.
$A = \{x : x \text{ is a natural number less than } 4\}$
$B = \{2,\ 3,\ 4,\ 5,\ 6\}$
A) $A \cap B = \varnothing$
B) $A \cap B = \{2,\ 3\}$
C) $A \cap B = \{4,\ 5,\ 6\}$
D) $A \cap B = \{2,\ 3,\ 4,\ 5,\ 6\}$
E) $A \cap B = \{-2,\ -1,\ 0,\ 2,\ 3\}$
Ans: B

17. Find $A \cup B$, the union of sets *A* and *B*.
$A = \{a,\ f,\ h,\ o,\ u\}$ and $B = \{a,\ b,\ c,\ d\}$
A) $A \cup B = \{f,\ h,\ o, u\}$
B) $A \cup B = \{a,\ b,\ c,\ d\}$
C) $A \cup B = \{a,\ b,\ c,\ d,\ f,\ h,\ o,\ u\}$
D) $A \cup B = \{a,\ c,\ d,\ f,\ h,\ o,\ u\}$
E) $A \cup B = \{a,\ c,\ d,\ f,\ u\}$
Ans: C

18. Find $A \cup B$, the union of sets *A* and *B*.
$A = \{x : x \text{ is a natural number greater than } 5\}$
$B = \{x : x \text{ is a natural number less than } 5\}$
A) $A \cup B = \{x : x \text{ is a natural number greater than or equal to } 5\}$
B) $A \cup B = \{5\}$
C) $A \cup B = \{x : x \text{ is a natural number not equal to } 5\}$
D) $A \cup B$ is the set of natural numbers.
E) $A \cup B = \{x : x \text{ is a natural number less than } 5\}$
Ans: C

19. Assume that $A = \{1, 2, 5, 7, 8\}$ and that *U* is the universal set of natural numbers less than 11. Find A'
A) $A' = \{1, 2, 5, 7, 8\}$
B) $A' = \{3, 4, 6, 9, 10\}$
C) $A' = \{2, 3, 5, 6\}$
D) $A' = \{4, 6, 9, 10\}$
E) $A' = \{1, 3, 5, 7\}$
Ans: B

20. Assume that

$A = \{1, 2, 3, 5, 8, 7\}$

$B = \{1, 2, 5, 7, 8\}$

and that U is the universal set of natural numbers less than 11. Find $A \cap B'$.

A) $A \cap B' = \{1, 2, 3, 5, 8, 7\}$

B) $A \cap B' = \{3, 4, 6, 9, 10\}$

C) $A \cap B' = \{3\}$

D) $A \cap B' = \{1, 2, 6, 7, 8, 9, 10\}$

E) $A \cap B' = \{1, 2, 5, 7, 8, 9\}$

Ans: C

21. Assume that

$A = \{1, 2, 3, 5, 8, 7\}$

$B = \{1, 2, 5, 7, 8\}$

and that U is the universal set of natural numbers less than 11. Find $A' \cap B'$.

A) $A' \cap B' = \{1, 5, 7, 8\}$

B) $A' \cap B' = \{2, 4, 9, 10\}$

C) $A' \cap B' = \{3, 6, 7\}$

D) $A' \cap B' = \{4, 6, 9, 10\}$

E) $A' \cap B' = \{1, 3, 5, 7\}$

Ans: D

22. Assume that

$A = \{1, 2, 3, 5, 8, 7\}$

$B = \{1, 2, 5, 7, 8\}$

and that U is the universal set of natural numbers less than 11. Find $(A \cap B)'$.

A) $(A \cap B)' = \{3, 4, 6, 9, 10\}$

B) $(A \cap B)' = \{1, 4, 7, 9, 10\}$

C) $(A \cap B)' = \{2, 5, 6, 7, 9\}$

D) $(A \cap B)' = \{1, 4, 5, 7, 9\}$

E) $(A \cap B)' = \{3, 5, 7, 9\}$

Ans: A

23. Assume that
$A = \{1, 2, 3, 5, 8, 7\}$
$B = \{1, 2, 5, 7, 8\}$
and that U is the universal set of natural numbers less than 11. Find $(A' \cup B)'$.
A) $(A' \cup B)' = \{3\}$
B) $(A' \cup B)' = \{6, 9, 10\}$
C) $(A' \cup B)' = \{5\}$
D) $(A' \cup B)' = \{7\}$
E) $(A' \cup B)' = \{3, 7\}$
Ans: A

24. Assume that
$A = \{1, 2, 3, 5, 8, 7\}$
$B = \{1, 2, 5, 7, 8\}$
$C = \{2, 3, 5, 6\}$
and that U is the universal set of natural numbers less than 11. Find $A \cap (B' \cup C')$.
A) $A \cap (B' \cup C') = \{1, 2, 3, 8, 9\}$
B) $A \cap (B' \cup C') = \{1, 4, 7, 8\}$
C) $A \cap (B' \cup C') = \{1, 3, 7, 8\}$
D) $A \cap (B' \cup C') = \{3, 5, 7\}$
E) $A \cap (B' \cup C') = \{1, 7, 8\}$
Ans: C

25. Assume that
$A = \{1, 2, 3, 5, 8, 7\}$
$B = \{1, 2, 5, 7, 8\}$
$C = \{2, 3, 5, 6\}$
and that U is the universal set of natural numbers less than 11. Find $A \cap (B \cup C)$.
A) $A \cap (B \cup C) = \{2, 5, 6\}$
B) $A \cap (B \cup C) = \{1, 2, 3, 5, 7, 8\}$
C) $A \cap (B \cup C) = \{3, 7\}$
D) $A \cap (B \cup C) = \{1, 2, 4, 7, 9\}$
E) $A \cap (B \cup C) = \{3, 5, 7, 9\}$
Ans: B

26. Find $A - B$ if the universal set $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$.

$A = \{1, 2, 3, 6, 9\}$

$B = \{1, 2, 5, 6, 7\}$

A) $A - B = \varnothing$

B) $A - B = \{8, 9\}$

C) $A - B = \{2, 3, 7\}$

D) $A - B = \{5, 7, 8\}$

E) $A - B = \{3, 9\}$

Ans: E

27. Find $A - B$ if the universal set $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$.

$A = \{6, 5, 4, 1, 3, 2\}$

$B = \{1, 2, 3, 4, 5, 6\}$

A) $A - B = \varnothing$

B) $A - B = \{1, 2, 3, 4, 5, 6\}$

C) $A - B = \{2, 4, 6, 8\}$

D) $A - B = \{3, 6, 8\}$

E) $A - B = \{3, 5, 7\}$

Ans: A

28. Find $A - B$ if the universal set $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$.

$A = \{1, 2, 3, 4, 5\}$

$B = \{2, 3, 5, 7, 9\}$

A) $A - B = \varnothing$

B) $A - B = \{1, 4\}$

C) $A - B = \{2, 3, 5\}$

D) $A - B = \{7, 9\}$

E) $A - B = \{3, 5\}$

Ans: B

29. Suppose that a survey of 100 advertisers in *U.S. News, These Times,* and *World* found the following.

15 advertised in all three
18 advertised in *These Times* and *U.S. News*
39 advertised in *World* and *U.S. News*
33 advertised in *World* and *These Times*
49 advertised in *These Times*
53 advertised in *U.S. News*
68 advertised in *World*

How many advertised in none of these publications?
A) 35
B) 15
C) 5
D) 11
E) 55
Ans: C

30. Suppose that a survey of 100 advertisers in *U.S. News, These Times,* and *World* found the following.

15 advertised in all three
18 advertised in *These Times* and *U.S. News*
39 advertised in *World* and *U.S. News*
33 advertised in *World* and *These Times*
49 advertised in *These Times*
53 advertised in *U.S. News*
68 advertised in *World*

How many advertised only in *These Times*?
A) 13
B) 21
C) 3
D) 6
E) 49
Ans: A

31. Suppose that a survey of 100 advertisers in *U.S. News*, *These Times*, and *World* found the following.

    15 advertised in all three
    18 advertised in *These Times* and *U.S. News*
    39 advertised in *World* and *U.S. News*
    33 advertised in *World* and *These Times*
    49 advertised in *These Times*
    53 advertised in *U.S. News*
    68 advertised in *World*

    How many advertised in *U.S. News* or *These Times*?
    A) 84
    B) 27
    C) 3
    D) 39
    E) 53
    Ans: A

32. In a survey of the dining preferences of 110 dormitory students at the end of the spring semester, the following facts were discovered about Adam's Lunch *AL*, Pizza Tower *PT*, and the Dining Hall *DH*.

    15 liked AL but not PT
    10 liked AL only
    23 liked AL
    42 liked PT
    48 liked DH
    4 liked PT and AL but not DH
    25 liked PT and DH

    How many liked PT or DH?
    A) 52
    B) 25
    C) 39
    D) 27
    E) 65
    Ans: E

33. In a survey of the dining preferences of 110 dormitory students at the end of the spring semester, the following facts were discovered about Adam's Lunch *AL*, Pizza Tower *PT*, and the Dining Hall *DH*.

    19 liked AL but not PT
    10 liked AL only
    23 liked AL
    42 liked PT
    48 liked DH
    4 liked PT and AL but not DH
    25 liked PT and DH

    How many liked all three?
    A) 37
    B) 34
    C) 18
    D) 0
    E) 38
    Ans: D

34. In a survey of the dining preferences of 110 dormitory students at the end of the spring semester, the following facts were discovered about *AL*, Pizza Tower *PT*, and the Dining Hall *DH*.

    19 liked AL but not PT
    10 liked AL only
    23 liked AL
    42 liked PT
    48 liked DH
    4 liked PT and AL but not DH
    25 liked PT and DH

    How many liked only DH?
    A) 23
    B) 14
    C) 9
    D) 25
    E) 34
    Ans: B

35. Indicate whether the given expression is one or more of the following types of numbers: rational, irrational, integer, natural.

$\frac{15}{3}$

A) integer
B) rational
C) rational, integer
D) rational, integer, natural
E) irrational
Ans: D

36. Indicate whether the given expression is one or more of the following types of numbers: rational, irrational, integer, natural.

–1.2290

A) integer
B) rational
C) rational, integer
D) rational, integer, natural
E) irrational
Ans: B

37. Indicate whether the given expression is one or more of the following types of numbers: rational, irrational, integer, natural.

3.23

A) integer
B) rational
C) rational, integer
D) rational, integer, natural
E) irrational
Ans: B

38. Indicate whether the given expression is one or more of the following types of numbers: rational, irrational, integer, natural.

$\frac{1}{4}$

A) integer
B) rational
C) rational, integer
D) rational, integer, natural
E) irrational
Ans: B

39. Which property of the real numbers is illustrated in this equality?
$7(3 \cdot 2) = (7 \cdot 3)2$

A) additive identity
B) multiplicative inverse
C) associative
D) multiplicative identity
E) commutative
Ans: C

40. Which property of the real numbers is illustrated in this equality?
$9 + 0 = 9$

A) additive identity
B) multiplicative inverse
C) associative
D) multiplicative identity
E) commutative
Ans: A

41. Which property of the real numbers is illustrated in this equality?
$\left(\frac{2}{4}\right)\left(\frac{4}{2}\right) = 1$

A) additive identity
B) multiplicative inverse
C) additive inverse
D) multiplicative identity
E) associative
Ans: B

42. Choose the proper symbol $<, =,$ or $>$ to replace $\square$.

$\pi \square 3.14$
A) $\pi < 3.14$
B) $\pi = 3.14$
C) $\pi > 3.14$
Ans: C

43. Choose the proper symbol $<, =,$ or $>$ to replace $\square$.

$0.1111 \square \frac{1}{9}$
A) $0.1111 < \frac{1}{9}$
B) $0.1111 = \frac{1}{9}$
C) $0.1111 > \frac{1}{9}$
Ans: A

44. Choose the proper symbol $<, =,$ or $>$ to replace $\square$.

$\frac{1}{3}+\frac{1}{5} \square \frac{8}{15}$

A) $\frac{1}{3}+\frac{1}{5}<\frac{8}{15}$

B) $\frac{1}{3}+\frac{1}{5}=\frac{8}{15}$

C) $\frac{1}{3}+\frac{1}{5}>\frac{8}{15}$

Ans: B

45. Choose the proper symbol $<, =,$ or $>$ to replace $\square$.

$|-3-7| \square |-3|+|7|$

A) $|-3-7|<|-3|+|7|$

B) $|-3-7|=|-3|+|7|$

C) $|-3-7|>|-3|+|7|$

Ans: B

46. Evaluate the following expression.

$(-2)^2+10 \cdot 5$

A) 46
B) 70
C) 54
D) 30
E) –46

Ans: C

47. Evaluate the following expression.

$\frac{6+4^2}{2}$

A) 5
B) 7
C) 14
D) 10
E) 11

Ans: E

48. Evaluate the following expression.

$$\frac{(8+2)^2}{2}$$

A) 50
B) 34
C) 33
D) 6
E) 42
Ans: A

49. Evaluate the following expression.

$$\frac{(-6)(-2)-(-2)(3)}{-2+5}$$

A) –6
B) 9
C) 6
D) 2
E) –2
Ans: C

50. Evaluate the following expression.

$$\frac{|7-|6-16||}{-|5^2-3^2|}$$

A) $\frac{17}{16}$
B) $\frac{3}{16}$
C) $-\frac{15}{16}$
D) $-\frac{3}{16}$
E) $-\frac{17}{16}$
Ans: D

51. Evaluate the following expression.

$$\frac{5^2-3(-3)(-2)}{2-2^2\div 4}$$

A) 86
B) 7
C) –14
D) 43
E) –86
Ans: B

52. Evaluate the following expression.

$$\frac{4-6(3-5)}{(-2)^2-2^2+2}$$

A) –4
B) 8
C) –2
D) 2
E) 7
Ans: B

53. Choose the interval which corresponds to $x \geq 9$.

A) $(9, \infty)$
B) $(-\infty, 9)$
C) $(-\infty, \infty)$
D) $(-\infty, 9]$
E) $[9, \infty)$
Ans: E

54. Express the inequality using interval notation.
$-6 \leq x \leq 2$

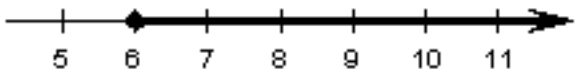
A) $(-6, 2]$
B) $(-\infty, 2)$
C) $[-6, \infty)$
D) $[-6, 2]$
E) $[-6, 2)$
Ans: D

55. Name the type of interval expressed in the inequality.

$-4 \leq x \leq 5$

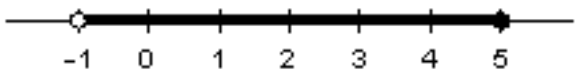
A) closed interval
B) open interval
C) half-open interval
Ans: A

56. Express the graph below using interval notation.



A) $[6, \infty)$
B) $(6, \infty)$
C) $[4, \infty]$
D) $[4, \infty)$
E) $[6, 11]$
Ans: A

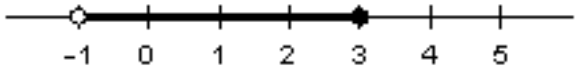
57. Name the type of interval shown in the graph below.



A) closed interval
B) open interval
C) half-open interval
Ans: C

58. Choose the inequality that describes the interval below.
$(3, \infty)$
A) $x < 3$
B) $x \leq 3$
C) $-3 < x < 3$
D) $x > 3$
E) $x \geq 3$
Ans: D

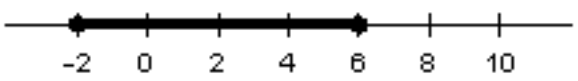
59. Choose the inequality that describes the graph below.



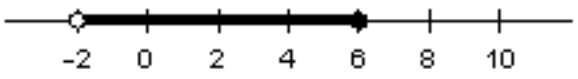
A) $-1 \leq x \leq 3$
B) $-1 \leq x < 2$
C) $-1 < x \leq 3$
D) $-1 < x < 3$
E) $-1 \leq x < 4$
Ans: C

60. Choose the graph that represents this subset of the real numbers.
$[-2,12) \cap [-21,6]$

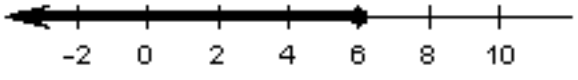
A)



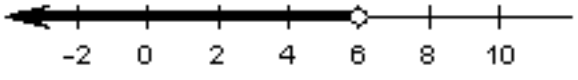
B)



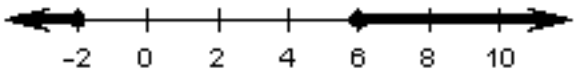
C)



D)



E)



Ans: A

61. Choose the correct interval notation for this subset of the real numbers.
$[-4,16) \cap [-14,9]$

A) $[-14,9]$

B) $[-4,9]$

C) $[-4,16]$

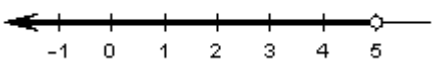
D) $[-14,16]$

E) $\varnothing$

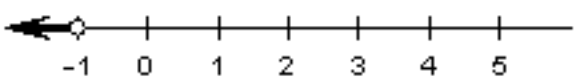
Ans: B

62. Choose the graph that represents this subset of the real numbers.
$x < 5$ and $x < -1$

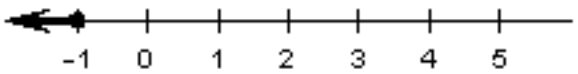
A)



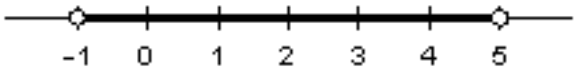
B)



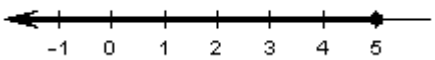
C)



D)



E)



Ans: B

63. Choose the correct interval notation for this subset of the real numbers.
$x < 7$ and $x < -4$

A) $(-\infty, 7]$

B) $(-\infty, -4]$

C) $(-\infty, 7)$

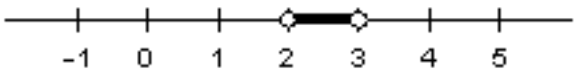
D) $(-\infty, -4)$

E) $\varnothing$

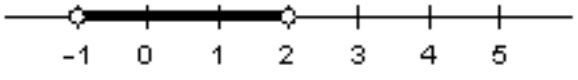
Ans: D

64. Choose the graph that represents this subset of the real numbers.
$(-\infty, 3) \cup (-1, 2)$

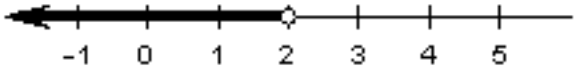
A)



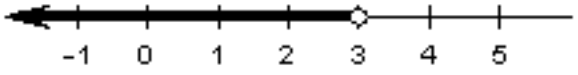
B)



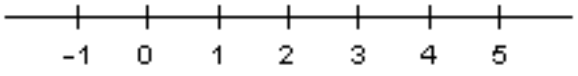
C)



D)



E)



This graph represents the empty set.

Ans: D

65. Choose the correct interval notation for this subset of the real numbers.
$(-\infty, 6) \cup (-1, 4)$

A) $(-\infty, 6)$

B) $(-\infty, 4)$

C) $(-1, 6)$

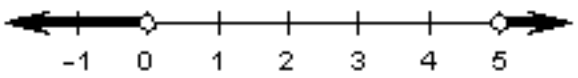
D) $(-1, 4)$

E) $\varnothing$

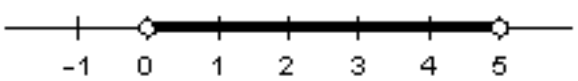
Ans: A

66. Choose the graph that represents this subset of the real numbers.
$x > 5$ and $x < 0$

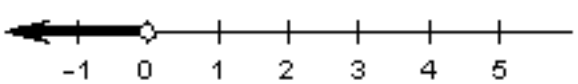
A)



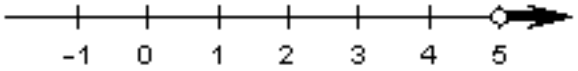
B)



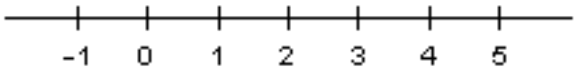
C)



D)



E)



This graph represents the empty set.

Ans: A

67. Use your calculator to approximate the following expression.

$$\frac{54.858}{155.73}$$

A) 2.83878377
B) 0.35226353
C) 3.52263533
D) 0.03522635
E) 28.3878377

Ans: B

68. Use your calculator to approximate the following expression.
$(2.84)^7$

A) 524.69876294
B) 4232.01034237
C) 251.23401195
D) 1490.14448675
E) 184.75308554

Ans: D

69. Use your calculator to approximate the following expression.

$$65\left(\frac{(1.09)^9 - 4}{0.07}\right)$$

A) –1697.52766909
B) –3573.11265112
C) 1756.75804520
D) 1959.61518805
E) 84.03020602
Ans: A

70. The approximate percent P of average income used to pay federal, state, and local taxes is given by $P = 0.24627t + 25.96473$, where t is the number of years after 1950. Which t-value represents the year 1985?

A) 20
B) 35
C) 25
D) 30
E) 40
Ans: B

71. The approximate percent P of average income used to pay federal, state, and local taxes is given by $P = 0.24627t + 25.96473$, where t is the number of years after 1950. The actual tax load for 1980 was 33.8%. What does the formula give as an approximation? Round your answer to one decimal place.

A) 18.6%
B) 42.1%
C) 33.4%
D) 13.8%
E) 42.9%
Ans: C

72. The approximate percent P of average income used to pay federal, state, and local taxes is given by $P = 0.24627t + 25.96473$, where t is the number of years after 1950. Approximate the tax load for year 2012. Round your answer to one decimal place.

A) 50.1%
B) 41.3%
C) 41.2%
D) 52.1%
E) 21.7%
Ans: C

73. From data adapted from the National Center for Health Statistics, the height H in inches and age A in years for boys between 4 and 16 years of age are related according to $H = 2.65A + 34.50$. To account for normal variability among boys, normal height for a given age is $\pm 5\%$ of the height obtained from the equation. Find the inequality which represents the normal height range for a boy who is 13.75 years old. Round your answer to two decimal places.
    A) $70.94 \le H \le 74.48$
    B) $67.39 \le H \le 70.94$
    C) $67.39 \le H \le 74.48$
    D) $67.39 \le H \le 78.21$
    E) $64.02 \le H \le 74.48$
    Ans: C

74. Based on data adapted from the National Center for Health Statistics, the height H in inches and age A in years for boys between 4 and 16 years of age are related according to: $H = 2.56A + 29.95$. To account for normal variability among boys, normal height for a given age is $\pm 5\%$ of the height obtained from the equation. Find the inequality which represents the normal height range for a boy who is 8.25 years old. Round your answer to two decimal places.
    A) $48.52 \le H \le 53.62$
    B) $48.52 \le H \le 51.07$
    C) $51.07 \le H \le 53.62$
    D) $48.52 \le H \le 56.30$
    E) $46.09 \le H \le 53.62$
    Ans: A

