Solving Equations Practice Test 1.1-1.4

____ 1. To which subsets of the real numbers does the number 1.48 belong?
   a. natural numbers, whole numbers, integers, rational numbers
   b. rational numbers, irrational numbers
   c. rational numbers
   d. none of the above

2. To which subsets of the real numbers does the number 63 belong?

3. To which subsets of the real numbers does the number $\sqrt{19}$ belong?

4. What is the order of $\sqrt{5}, -0.9, -\frac{5}{3}, 0.6, \sqrt{3}$ from least to greatest?

What is the solution of the equation?

5. $3.8x + 1.7 = 16.9$

6. $\frac{4}{5}x + 6 = 8$

7. $7 = -d + 10$

8. $\frac{b-5}{2} = 8$

9. $25 = -9 - 7x$

10. $8d + 2d + d - 8 - 5d = 0$

11. $-6y + 14 + 4y = 32$

12. $13 = -2p + 8 + 3p$

13. $3(y + 3) + 4 = 40$

What is the solution of the equation?

14. $3(y - 3) = 18$

15. $\frac{2p}{4} - \frac{38}{4} = -8$

16. $-9(x + 2) = -2(8x - 5)$

17. $2(h - 5) - h = h - 10$

18. $-11 + 6z = -6 + 6z$

19. $\frac{4}{7}(x+1) = 6$

20. $\frac{2}{6}x + \frac{6}{7} = 2$

21. $\frac{2x-7}{6} = \frac{3x+1}{10}$

22. The parking garage at Lego Land charges you $30 to enter but only $3 per hour. The parking garage at the hotel next door knows that people will park in their lot. So they charge $10 to enter and $7 per hour. Write and solve an equation to find the number of hours in which the garages will cost the same amount.

23. a. Solve P = 2L+ 2w for L

b. If you have 52 feet of lumber to construct the sides of a sandbox, and the length is set at 16 feet, how wide can the sandbox be?

24. a. Solve $A = lw$ for w

b. If the length of a rectangular sandbox is set at 16 feet, what width is required to obtain an area of 200 square feet?

Solving Equations Practice Test 1.1-1.4
Answer Section

1. ANS: C PTS: 1 DIF: L3 REF: 1-1 Operations on Real Numbers
   OBJ: 1-1.1 Find the sum or product of two rational numbers and explain why the sum or product is rational.
   NAT: HSN.RN.B.3 STA: 1.1.a| 1.1.b| 1.3.a
   TOP: 1-1 Example 1 Understand Sets and Subsets
   KEY: natural numbers | whole numbers | integers | rational numbers | irrational numbers
2. ANS:
   integers, rational numbers, natural numbers, and whole numbers

   PTS: 1 DIF: L3 REF: 1-1 Operations on Real Numbers
   OBJ: 1-1.1 Find the sum or product of two rational numbers and explain why the sum or product is rational.
   NAT: HSN.RN.B.3 STA: 1.1.a| 1.1.b| 1.3.a
   TOP: 1-1 Example 1 Understand Sets and Subsets KEY: integers | rational numbers
3. ANS:
   irrational numbers

   PTS: 1 DIF: L3 REF: 1-1 Operations on Real Numbers
   OBJ: 1-1.1 Find the sum or product of two rational numbers and explain why the sum or product is rational.
   NAT: HSN.RN.B.3 STA: 1.1.a| 1.1.b| 1.3.a
   TOP: 1-1 Example 1 Understand Sets and Subsets KEY: integers | rational numbers
4. ANS:
   $-\frac{5}{3}$, –0.9, 0.6, $\sqrt{3}$, $\sqrt{5}$

   PTS: 1 DIF: L2 REF: 1-1 Operations on Real Numbers
   OBJ: 1-1.1 Find the sum or product of two rational numbers and explain why the sum or product is rational.
   NAT: HSN.RN.B.3 STA: 1.1.a| 1.1.b| 1.3.a
   TOP: 1-1 Example 2 Compare and Order Real Numbers
   KEY: rational numbers | real numbers | comparing numbers
5. ANS:
   4

   PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
   OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
   NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
   TOP: 1-2 Example 1 Solve Linear Equations
   KEY: equation in one variable | isolate | inverse operations
6. ANS:
   $2\frac{1}{2}$

   PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
   OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
   NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
   TOP: 1-2 Example 1 Solve Linear Equations
   KEY: equation in one variable | isolate | inverse operations
7. ANS:
   3

PTS: 1 DIF: L2 REF: 1-2 Solving Linear Equations
OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 1 Solve Linear Equations
KEY: equation in one variable | isolate | inverse operations

8. ANS:
21

PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 1 Solve Linear Equations
KEY: equation in one variable | isolate | inverse operations

9. ANS:

Steps	**Reasons**
$25 = -9 - 7x$	Original equation
$25 + 9 = -9 + (-7x) + 9$	Addition Property of Equality
$25 + 9 = -9 + 9 + (-7x)$	Commutative Property of Addition
$34 = -7x$	Use addition to simplify.
$\frac{34}{-7} = \frac{-7x}{-7}$	Division Property of Equality
$-\frac{34}{7} = x$	Use division to simplify.

PTS: 1 DIF: L4 REF: 1-2 Solving Linear Equations
OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 1 Solve Linear Equations
KEY: justify steps in solution | equation in one variable

10. ANS:
$\frac{4}{3}$

PTS: 1 DIF: L4 REF: 1-2 Solving Linear Equations
OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 1 Solve Linear Equations
KEY: like terms | equation in one variable | inverse operations

11. ANS:
–9

PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 1 Solve Linear Equations
KEY: like terms | equation in one variable | inverse operations

12. ANS:
5

PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
OBJ: 1-2.1 Explain that each step in solving a linear equation follows from the equality in the previous step.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 1 Solve Linear Equations
KEY: like terms | equation in one variable | inverse operations

13. ANS:
9

PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
OBJ: 1-2.2 Create and solve linear equations with one variable using the properties of equality.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 4 Use Linear Equations to Solve Problems
KEY: Distributive Property | equation in one variable | inverse operations

14. ANS:
9

PTS: 1 DIF: L2 REF: 1-2 Solving Linear Equations
OBJ: 1-2.2 Create and solve linear equations with one variable using the properties of equality.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 4 Use Linear Equations to Solve Problems
KEY: Distributive Property | equation in one variable | inverse operations

15. ANS:
3

PTS: 1 DIF: L3 REF: 1-2 Solving Linear Equations
OBJ: 1-2.2 Create and solve linear equations with one variable using the properties of equality.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-2 Example 4 Use Linear Equations to Solve Problems
KEY: equation in one variable | inverse operations

16. ANS:
4

PTS: 1 DIF: L3 REF: 1-3 Solving Equations with a Variable on Both Sides
OBJ: 1-3.1 Use the properties of equality to solve linear equations with a variable on both sides.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-3 Example 1 Solving Equations With a Variable on Both Sides
KEY: Distributive Property | like terms

17. ANS: B PTS: 1 DIF: L3
REF: 1-3 Solving Equations with a Variable on Both Sides

OBJ: 1-3.2 Identify whether linear equations have one solution, infinitely many solutions, or no solution.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-3 Example 2 Understand Equations With Infinitely Many or No Solutions
KEY: identity | no solution

18. ANS: A PTS: 1 DIF: L3
REF: 1-3 Solving Equations with a Variable on Both Sides
OBJ: 1-3.2 Identify whether linear equations have one solution, infinitely many solutions, or no solution.
NAT: HSA.CED.A.1| HSA.REI.A.1| HSA.REI.B.3
TOP: 1-3 Example 2 Understand Equations With Infinitely Many or No Solutions
KEY: identity | no solution