

## Solving Equations Practice Test 1.1-1.4

- \_\_\_\_\_ 1. To which subsets of the real numbers does the number 1.48 belong?
- natural numbers, whole numbers, integers, rational numbers
  - rational numbers, irrational numbers
  - rational numbers
  - 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