

**A.REI.B.3: Solving Linear Equations 1**1 The solution to  $3(x - 8) + 4x = 8x + 4$  is

- 1) 12  
2) 28  
3) -12  
4) -28

2 The solution to  $-2(1 - 4x) = 3x + 8$  is

- 1)  $\frac{6}{11}$   
2) 2  
3)  $-\frac{10}{7}$   
4) -2

3 What is the solution to  $2 + 3(2a + 1) = 3(a + 2)$ ?

- 1)  $\frac{1}{7}$   
2)  $\frac{1}{3}$   
3)  $-\frac{3}{7}$   
4)  $-\frac{1}{3}$

4 An equation is given below.

$$4(x - 7) = 0.3(x + 2) + 2.11$$

The solution to the equation is

- 1) 8.3  
2) 8.7  
3) 3  
4) -3

5 The value of  $x$  that satisfies the equation

$$\frac{4}{3} = \frac{x + 10}{15} \text{ is}$$

1) -6  
2) 5  
3) 10  
4) 30

6 The solution to  $\frac{4(x - 5)}{3} + 2 = 14$  is

- 1) 15  
2) 14  
3) 6  
4) 4

7 What is the value of  $x$  in the equation

$$\frac{5(2x - 4)}{3} + 9 = 14?$$

- 1) 1.9  
2) 3.5  
3) 5.3  
4) 8.9

8 What is the value of  $x$  in the equation

$$\frac{x - 2}{3} + \frac{1}{6} = \frac{5}{6}?$$

- 1) 4  
2) 6  
3) 8  
4) 11

9 Which value of  $x$  makes  $\frac{x - 3}{4} + \frac{2}{3} = \frac{17}{12}$  true?

- 1) 8  
2) 6  
3) 0  
4) 4

10 Which value of  $x$  satisfies the equation

$$\frac{7}{3} \left( x + \frac{9}{28} \right) = 20?$$

- 1) 8.25  
2) 8.89  
3) 19.25  
4) 44.92

11 Which value of  $x$  satisfies the equation

$$\frac{5}{6} \left( \frac{3}{8} - x \right) = 16?$$

- 1)  $-19.575$
- 2)  $-18.825$
- 3)  $-16.3125$
- 4)  $-15.6875$

12 The solution to  $\frac{2}{3}(3 - 2x) = \frac{3}{4}$  is

- 1)  $-\frac{11}{8}$
- 2)  $\frac{5}{8}$
- 3)  $-\frac{33}{16}$
- 4)  $\frac{15}{16}$

13 When solving  $-2(3x - 5) = \frac{9}{2}x - 2$  for  $x$ , the solution is

- 1)  $\frac{8}{7}$
- 2)  $\frac{10}{11}$
- 3)  $-\frac{16}{21}$
- 4)  $-\frac{16}{3}$

14 The value of  $x$  which makes

$$\frac{2}{3} \left( \frac{1}{4}x - 2 \right) = \frac{1}{5} \left( \frac{4}{3}x - 1 \right)$$
 true is

- 1)  $-10$
- 2)  $-2$
- 3)  $-9.\overline{09}$
- 4)  $-11.\overline{3}$

15 What is the solution to the equation

$$\frac{3}{5} \left( x + \frac{4}{3} \right) = 1.04?$$

- 1)  $3.0\overline{6}$
- 2)  $0.4$
- 3)  $-0.4\overline{8}$
- 4)  $-0.70\overline{93}$

16 Which of the equations below have the same solution?

- I.  $10(x - 5) = -15$
- II.  $4 + 2(x - 2) = 9$
- III.  $\frac{1}{3}x = \frac{3}{2}$

- 1) I and II, only
- 2) I and III, only
- 3) II and III, only
- 4) I, II, and III

17 Solve algebraically for  $x$ :  $0.05(x - 3) = 0.35x - 7.5$

18 Solve the equation algebraically for  $x$ :  
 $-2.4(x + 1.4) = 6.8x - 22.68$

19 Solve the equation below algebraically for the exact value of  $x$ .

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

20 Solve algebraically for  $x$ :

$$-\frac{2}{3}(x + 12) + \frac{2}{3}x = -\frac{5}{4}x + 2$$

**A.REI.B.3: Solving Linear Equations 1**  
**Answer Section**

1 ANS: 4

$$3x - 24 + 4x = 8x + 4$$

$$7x - 24 = 8x + 4$$

$$-28 = x$$

REF: 062106ai

2 ANS: 2

$$-2 + 8x = 3x + 8$$

$$5x = 10$$

$$x = 2$$

REF: 081804ai

3 ANS: 2

$$2 + 3(2a + 1) = 3(a + 2)$$

$$2 + 6a + 3 = 3a + 6$$

$$3a + 5 = 6$$

$$3a = 1$$

$$a = \frac{1}{3}$$

REF: 012307ai

4 ANS: 1

$$4(x - 7) = 0.3(x + 2) + 2.11$$

$$4x - 28 = 0.3x + 0.6 + 2.11$$

$$3.7x - 28 = 2.71$$

$$3.7x = 30.71$$

$$x = 8.3$$

REF: 061719ai

5 ANS: 3

$$\frac{4}{3} = \frac{x + 10}{15}$$

$$3x + 30 = 60$$

$$x = 10$$

REF: 081904ai

6 ANS: 2

$$\frac{4(x - 5)}{3} = 12$$

$$4x - 20 = 36$$

$$4x = 56$$

$$x = 14$$

REF: 062406ai

7 ANS: 2

$$\frac{5(2x - 4)}{3} = 5$$

$$10x - 20 = 15$$

$$10x = 35$$

$$x = 3.5$$

REF: 082304ai

8 ANS: 1

$$\frac{x - 2}{3} = \frac{4}{6}$$

$$6x - 12 = 12$$

$$6x = 24$$

$$x = 4$$

REF: 081420ai

9 ANS: 2

$$\frac{x - 3}{4} + \frac{8}{12} = \frac{17}{12}$$

$$\frac{x - 3}{4} = \frac{9}{12}$$

$$\frac{x - 3}{4} = \frac{3}{4}$$

$$x - 3 = 3$$

$$x = 6$$

REF: 012005ai

10 ANS: 1

$$\frac{7}{3} \left( x + \frac{9}{28} \right) = 20$$

$$\frac{7}{3}x + \frac{3}{4} = \frac{80}{4}$$

$$\frac{7}{3}x = \frac{77}{4}$$

$$x = \frac{33}{4} = 8.25$$

REF: 061405ai

11 ANS: 2

$$6 \left( \frac{5}{6} \left( \frac{3}{8} - x \right) = 16 \right)$$

$$8 \left( 5 \left( \frac{3}{8} - x \right) = 96 \right)$$

$$15 - 40x = 768$$

$$-40x = 753$$

$$x = -18.825$$

REF: 081713ai

12 ANS: 4

$$\frac{3}{2} \left( \frac{2}{3} (3 - 2x) = \frac{3}{4} \right)$$

$$3 - 2x = \frac{9}{8}$$

$$24 - 16x = 9$$

$$15 = 16x$$

$$x = \frac{15}{16}$$

REF: 012416ai

13 ANS: 1

$$-2(3x - 5) = \frac{9}{2}x - 2$$

$$-4(3x - 5) = 9x - 4$$

$$-12x + 20 = 9x - 4$$

$$24 = 21x$$

$$x = \frac{24}{21} = \frac{8}{7}$$

REF: 012511ai

14 ANS: 4

$$\frac{2}{3}\left(\frac{1}{4}x - 2\right) = \frac{1}{5}\left(\frac{4}{3}x - 1\right)$$

$$10(3x - 24) = 3(16x - 12)$$

$$30x - 240 = 48x - 36$$

$$-204 = 18x$$

$$x = -11.\bar{3}$$

REF: 011822ai

15 ANS: 2

$$\frac{3}{5}\left(x + \frac{4}{3}\right) = 1.04$$

$$3\left(x + \frac{4}{3}\right) = 5.2$$

$$3x + 4 = 5.2$$

$$3x = 1.2$$

$$x = 0.4$$

REF: 011905ai

16 ANS: 3

$$10(x - 5) = -15 \quad 4 + 2(x - 2) = 9 \quad \frac{1}{3}x = \frac{3}{2}$$

$$10x - 50 = -15 \quad 4 + 2x - 4 = 9 \quad x = \frac{9}{2}$$

$$10x = 35 \quad 2x = 9 \quad x = \frac{9}{2}$$

$$x = \frac{7}{2} \quad x = \frac{9}{2}$$

REF: 082217ai

17 ANS:

$$0.05(x - 3) = 0.35x - 7.5$$

$$x - 3 = 7x - 150$$

$$147 = 6x$$

$$24.5 = x$$

REF: 082428ai

18 ANS:

$$-2.4(x + 1.4) = 6.8x - 22.68$$

$$-2.4x - 3.36 = 6.8x - 22.68$$

$$19.32 = 9.2x$$

$$2.1 = x$$

REF: 062325ai

19 ANS:

$$18 - 2(x + 5) = 12x$$

$$18 - 2x - 10 = 12x$$

$$8 = 14x$$

$$x = \frac{8}{14} = \frac{4}{7}$$

REF: 061830ai

20 ANS:

$$-12 \left( -\frac{2}{3}(x + 12) + \frac{2}{3}x = -\frac{5}{4}x + 2 \right)$$

$$8(x + 12) - 8x = 15x - 24$$

$$8x + 96 - 8x = 15x - 24$$

$$120 = 15x$$

$$8 = x$$

REF: 061925ai