10. Solving Linear Equations Practice Test

For #1 to #5, select the best answer.

1. What is the result of applying the distributive property to $3(a + 2)$?

A $3a - 2$ **B** $3a + 2$ **C** $3a - 6$ **D** $3a + 6$

2. What is the opposite operation of addition?

A addition **B** subtraction **C** multiplication **D** division

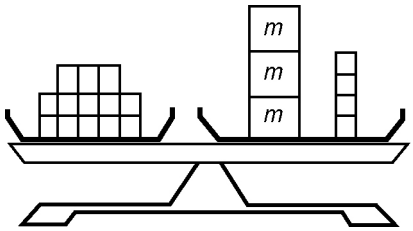
3. For which of the equations would you add 12 as the first step in the solution?

A $2(m - 12) = 3$ **B** $14 = \frac{x}{12}$ **C** $13 = y - 12$ **D** $12w - 5 = 7$

4. For which of the equations would you divide by 3 as the first step in the solution?

A $15 = 3h$ **B** $4m - 3 = 5$ **C** $2a - 1 = 3$ **D** $\frac{x}{3} = 7$

5. Which equation is modelled by this diagram?



A $13 + 3m = 4$ **B** $13 = 3m + 4$ **C** $13 = 3m - 4$ **D** $13 - 3m = 4$

Short Answer

6. Solve.

a) $x + 2 = 7$

b) $\frac{a}{4} = 8$

c) $24 = 2a$

d) $-4y = 16$

e) $\frac{m}{5} = -3$

f) $-9 = \frac{n}{-7}$

g) $-17 = -5 + h$

h) $-5k = -30$

7. Solve. Check your answers.

a) $3x + 2 = 11$

b) $4 = \frac{m}{3} - 1$

c) $-16 = -5a - 6$

d) $3(c + 5) = 12$

e) $-14 = -2(n - 6)$

f) $-4 - \frac{x}{8} = -7$

8. a) Draw a diagram that models the equation $7 = 5x - 3$.

b) What is the solution to this equation?

9. Lisa is 6 years older than twice her sister's age. Lisa is 12. Write and then solve an equation to determine the age of Lisa's sister.

10. a) Solve for x in the equation $x + 9 = 16$.

b) Use the value of x to find y in the equation $11 = y - x$.

c) Use the values of x and y to find m in the equation $2m + y = 3(x - 5)$.

Extended Response

11. a) What is wrong with the method used to solve the following equation?

$$-2 = 11 - \frac{x}{3}$$

$$-2 - 11 = 11 - 11 - \frac{x}{3}$$

$$-13 = \frac{x}{3}$$

$$-39 = x$$

b) What is the correct method?

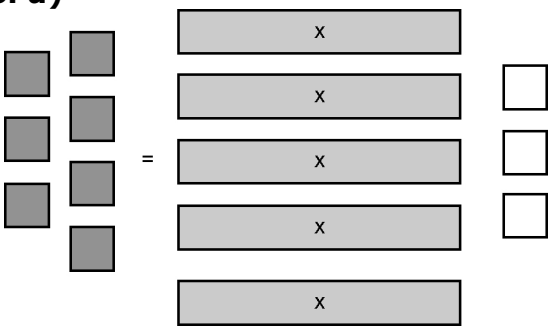
10. Solving Linear Equations Practice Test Answer Key

1. D **2.** B **3.** C **4.** A **5.** B

6. a) $x = 5$ **b)** $a = 32$ **c)** $a = 12$ **d)** $y = -4$
e) $m = -15$ **f)** $n = 63$ **g)** $h = -12$ **h)** $k = 6$

7. a) $x = 3$ **b)** $m = 15$ **c)** $a = 2$
d) $c = -1$ **e)** $n = 13$ **f)** $x = 24$

8. a)



b) $x = 2$

9. $12 = 2a + 6$, where a is the age of Lisa's sister
$6 = 2a$
$3 = a$
Lisa's sister is 3 years old.

10. a) $x = 7$ **b)** $y = 18$ **c)** $m = -6$

11. a) The negative sign was dropped from $-13 = \frac{x}{3}$. It should be $-13 = -\frac{x}{3}$.

b) Methods may vary. Example:

$$-2 = 11 - \frac{x}{3}$$

$$-2 - 11 = 11 - 11 - \frac{x}{3}$$

$$-13 = -\frac{x}{3}$$

$$-13 + \frac{x}{3} = -\frac{x}{3} + \frac{x}{3}$$

$$-13 + \frac{x}{3} = 0$$

$$-13 + 13 + \frac{x}{3} = 0 + 13$$

$$\frac{x}{3} = 13$$

$$x = 39$$