

# Grade 7 · Two-Step Equations · Quiz

Common Core 7.EE.B.3, 7.EE.B.4a · mathovore.fr

Name: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Score: \_\_\_\_\_

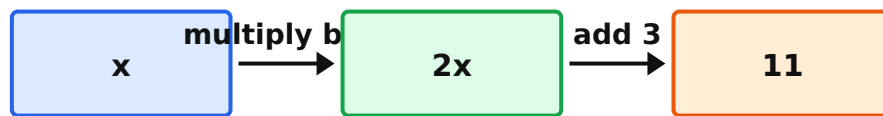
Ten multiple-choice questions check your skill with two-step equations: undoing operations in order, working with negatives, decimals and fractions, and writing an equation for a situation. Pick the one correct answer, then read the explanation to learn from any mistake.

**Grade 7 Common Core: 7.EE.B.3 · 7.EE.B.4a**

## Questions

### Question 1

What is the solution of  $2x+3=11$ ?



The equation  $2x+3=11$  as two steps.

- A.  $x=7$
- B.  $x=8$
- C.  $x=4$
- D.  $x=5.5$

### Question 2

What is the solution of  $5x-4=21$ ?

- A.  $x=3.4$
- B.  $x=4.2$
- C.  $x=25$
- D.  $x=5$

### Question 3

What is the solution of  $\frac{x}{6}+2=5$ ?

- A.  $x=3$
- B.  $x=18$
- C.  $x=42$
- D.  $x=30$

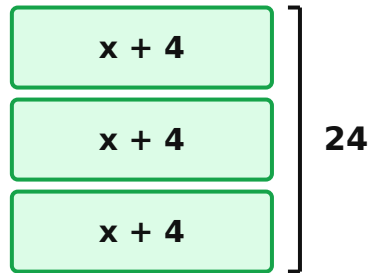
#### Question 4

What is the solution of  $-4x+1=-11$ ?

- A.  $x=-3$
- B.  $x=3$
- C.  $x=-2.5$
- D.  $x=2.5$

#### Question 5

What is the solution of  $3(x+4)=24$ ?



Three equal groups of  $x$  plus 4.

- A.  $x=4$
- B.  $x=8$
- C.  $x=20$
- D.  $x=12$

#### Question 6

Sofia pays \$8 to enter a fair and \$2.50 per ride. She spends \$23 in all. Which equation, with  $r$  rides, matches this?

|                 |            |
|-----------------|------------|
| Entry           | .00        |
| Rides, .50 each | ?          |
| <hr/>           |            |
| <b>Total</b>    | <b>.00</b> |

Sofia's day at the fair.

- A.  $8r+2.5=23$
- B.  $2.5(r+8)=23$
- C.  $2.5r+8=23$
- D.  $10.5r=23$

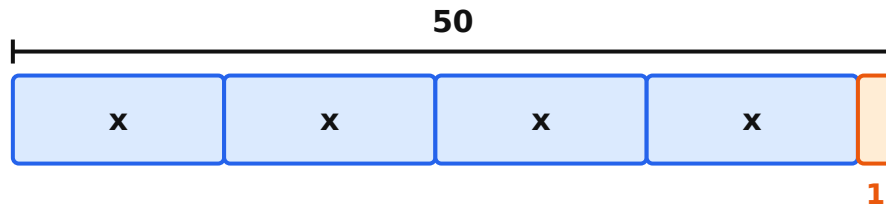
### Question 7

What is the solution of  $1.2x + 0.6 = 3$ ?

- A.  $x = 2$
- B.  $x = 3$
- C.  $x = 2.5$
- D.  $x = 2.4$

### Question 8

Which is the best estimate for the solution of  $4x + 1 = 50$ ?



The equation  $4x + 1 = 50$ .

- A. About 4
- B. About 46
- C. About 200
- D. About 12

### Question 9

What is the solution of  $2(x - 3) = 14$ ?

- A.  $x = 4$
- B.  $x = 10$
- C.  $x = 8.5$
- D.  $x = 17$

### Question 10

What is the solution of  $\frac{3}{4}x + 2 = 11$ ?

- A.  $x = 6.75$
- B.  $x = 9$
- C.  $x = 8.25$
- D.  $x = 12$

## Answer key

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1. **C** - Subtract 3 to get  $2x=8$ , then divide by 2:  $x=4$ . Adding 3 instead gives  $x=7$ , and skipping the 3 gives 5.5.
2. **D** - Add 4 to get  $5x=25$ , then divide by 5:  $x=5$ . Subtracting 4 gives 3.4, and stopping at  $5x=25$  gives 25.
3. **B** - Subtract 2 to get  $\frac{x}{6}=3$ , then multiply by 6:  $x=18$ . Stopping at 3 forgets the multiplication.
4. **B** - Subtract 1 to get  $-4x=-12$ , then divide by  $-4$ :  $x=3$ . A negative divided by a negative is positive.
5. **A** - Divide by 3:  $x+4=8$ , so  $x=4$ . The value 8 is only  $x+4$ , not  $x$ .
6. **C** - The entry fee is paid once and the rides cost 2.50 each, so the total is  $2.5r+8$ . The other options attach the 8 to each ride.
7. **A** - Subtract 0.6 to get  $1.2x=2.4$ , then divide by 1.2:  $x=2$ . Ignoring the 0.6 gives 2.5, and not dividing gives 2.4.
8. **D** - Since  $4x$  is about 49, which is close to 48,  $x$  is about  $48 \div 4 = 12$ . The value 46 forgets to divide by 4.
9. **B** - Divide by 2 to get  $x-3=7$ , then add 3:  $x=10$ . Subtracting 3 instead of adding it gives 4.
10. **D** - Subtract 2 to get  $\frac{3}{4}x=9$ , then multiply by  $\frac{4}{3}$ :  $x=12$ . Multiplying by  $\frac{3}{4}$  instead gives 6.75.

### Remember:

- Standards 7.EE.B.3 and 7.EE.B.4a: solve  $px+q=r$  and  $p(x+q)=r$  with rational numbers and use them in word problems.
- For  $px+q=r$ : subtract  $q$ , then divide by  $p$ .
- For  $p(x+q)=r$ : either divide by  $p$  first, or distribute and then solve.
- An arithmetic solution works backward through the steps and matches the algebra.
- Estimate with rounded numbers to check that an answer is reasonable.