

7.EE.4 — Equations & Inequalities in the Real World

Expressions & Equations • Grade 7 • Word Problems • Set B • CCSS 7.EE.4

Name: _____

Date: _____

Read each word problem carefully, write the equation, and solve for the unknown variable.

1. Ben bought several notebooks at \$1.25 each and spent a total of \$10.00. Using the equation $1.25n = 10.00$, where n is the number of notebooks, how many notebooks did Ben buy?

2. Sam is thinking of a number. When Sam multiplies it by 3 and adds 12, the result is 24. The equation $3x + 12 = 24$ represents this. What is the number Sam is thinking of?

3. A cell phone plan charges a flat monthly fee of \$25 plus \$0.10 per text message. Last month's bill was \$33.60. Using $0.10m + 25 = 33.60$, where m is the number of texts sent, how many text messages were sent?

4. Victor has some money. After spending \$4.75 on lunch and \$1.75 on a snack, Victor has \$10.75 left. The equation $x - 4.75 - 1.75 = 10.75$ models this. How much money did Victor start with?

5. A plumber charges a flat fee of \$21 plus \$35 per hour. The total bill was \$231. The equation $35h + 21 = 231$ represents this situation, where h is the number of hours worked. How many hours did the plumber work?

6. Tessa is saving money to buy a book that costs \$21.25. Tessa already has \$17.50 saved and writes the equation $x + 17.50 = 21.25$, where x is the amount still needed. How much more money does Tessa need?

7. A rectangular garden has a length that is 5.7 meters more than its width. The length is 8.4 meters. Using the equation $w + 5.7 = 8.4$, where w is the width, find the width of the garden.

8. Ivan earns \$15.00 per hour at a part-time job and wants to know how many hours to work to earn \$45.00. Ivan sets up $15h = 45.00$. How many hours must Ivan work?

9. A recipe calls for $\frac{2}{3}$ cup of sugar. Ava has already measured $\frac{1}{2}$ cup and writes $x + \frac{1}{2} = \frac{2}{3}$ to find how much more sugar is needed. How much more sugar does Ava need?

10. Sam ran $\frac{1}{2}$ mile in the morning and some more miles in the afternoon, 2 miles in total. The equation $\frac{1}{2} + x = 2$ represents this. How far did Sam run in the afternoon?

11. 3 friends split a restaurant bill equally, and each person paid \$2.50. Using the equation $3x = 7.50$ to find the total bill, what was the total restaurant bill?

12. A picture frame has a perimeter of 46 inches. The width is 10 inches. Using the equation $2(l + 10) = 46$, where l is the length, find the length of the frame.

13. A school bus can carry 49 passengers. After some students get off at the first stop, 15 students remain. Using the equation $49 - x = 15$, where x is the number of students who got off, how many students got off at the first stop?

14. Three times a number, decreased by 6, equals 3. The equation $3n - 6 = 3$ models this situation. What is the number?

15. Priya bought several notebooks at \$3.75 each and spent a total of \$30.00. Using the equation $3.75n = 30.00$, where n is the number of notebooks, how many notebooks did Priya buy?

16. Yara is thinking of a number. When Yara multiplies it by 3 and adds 5, the result is 26. The equation $3x + 5 = 26$ represents this. What is the number Yara is thinking of?

17. A cell phone plan charges a flat monthly fee of \$12 plus \$0.15 per text message. Last month's bill was \$26.55. Using $0.15m + 12 = 26.55$, where m is the number of texts sent, how many text messages were sent?

18. Zane has some money. After spending \$6.00 on lunch and \$3.00 on a snack, Zane has \$17.25 left. The equation $x - 6.00 - 3.00 = 17.25$ models this. How much money did Zane start with?

19. A plumber charges a flat fee of \$31 plus \$24 per hour. The total bill was \$127. The equation $24h + 31 = 127$ represents this situation, where h is the number of hours worked. How many hours did the plumber work?

20. Leo is saving money to buy a kite that costs \$17.25. Leo already has \$5.75 saved and writes the equation $x + 5.75 = 17.25$, where x is the amount still needed. How much more money does Leo need?

21. A rectangular garden has a length that is 7 meters more than its width. The length is 13 meters. Using the equation $w + 7 = 13$, where w is the width, find the width of the garden.

22. Ava earns \$13.50 per hour at a part-time job and wants to know how many hours to work to earn \$40.50. Ava sets up $13.5h = 40.50$. How many hours must Ava work?

Answer Key

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1. $n = 8$ notebooks

2. $x = 4$

3. $m = 86$ text messages

4. $x = \$17.25$

5. $h = 6$ hours

6. $x = \$3.75$

7. $w = 2.7$ meters

8. $h = 3$ hours

9. $x = \frac{1}{6}$ cup

10. $x = 1 \frac{1}{2}$ miles

11. $x = \$7.50$

12. $l = 13$ inches

13. $x = 34$ students

14. $n = 3$

15. $n = 8$ notebooks

16. $x = 7$

17. $m = 97$ text messages

18. $x = \$26.25$

19. $h = 4$ hours

20. $x = \$11.50$

21. $w = 6$ meters

22. $h = 3$ hours