

Math 7 Test
SOL 7.14—Linear Equations

Name: _____

Solve and check the following equations. Show all steps.

1) $m + 12 = 5$

2) $4 = n + 9$

3) $\frac{3}{4} = r + \frac{1}{8}$

4) $10.2 + c = (-8.14)$

5) $g - 16 = (-52)$

6) $-12.1 + j = 7.53$

7) $2.6x = 11.7$

8) $\frac{1}{5}d = (-3)$

9) $-7n = 63$

10) $\frac{g}{2.1} = (-6.8)$

11) $(-18) = m \div 3$

12) $-23 = \frac{c}{-4}$

$$13) 7m + 8 = 29$$

$$14) 16 - 4t = 24$$

$$15) \frac{f}{-9} + 4 = 2$$

$$16) 21 = (-14) + \frac{c}{5}$$

Write an equation for each situation, solve, and check. Circle answers. Include units in your answers.

17. The perimeter of a triangle is 25 feet. One side has a length of 8 feet and a second side has a length of 5.2 feet. What is the length of the unknown side, s ?

18. The temperature of dry ice is -109°F which is 183.6°F less than the outside temperature. What is the outside temperature, t ?

19. Chase swims the 50-meter freestyle in 28.12 seconds. This is 0.14 second less than his previous fastest time. What was Chase's previous fastest time, t ?



20. Game tokens cost \$0.75 each. Laci spends \$6.75 on tokens. How many tokens, t , does Laci purchase?

21. John earns \$7.50 per hour at a fast food restaurant. He earned \$123.75 last week. How many hours, h , did John work last week?

22. During a Saturday road trip, Sam traveled for 4.5 hours and averaged a speed of 70 miles per hour. How many miles, m , did Sam travel?



23. Students are asked to assemble into groups of 3 each. The result is 21 groups of 3. How many students, s , are in the class?

24. Sally picks 297 seashells by the seashore and lost 17 of them on her way home. She plans to fill five jars with the same amount of seashells in each. How many seashells, s , will Sally put in each jar?



25. The perimeter of a triangle is 60 meters. One side is 12 meters long. Two sides are unknown but are the same length. What is the length, u , of each of the unknown sides? (hint: draw picture)

26. Aaron spent \$23.85 at the bookstore on one book and some magazines. The book cost \$12.60 and the magazines cost \$2.25 each. How many magazines, m , did Aaron buy?

27. Chance's golf score was eight strokes less than the quotient of Evan's score and two. Chance's score was nine. What was Evan's score, e ?



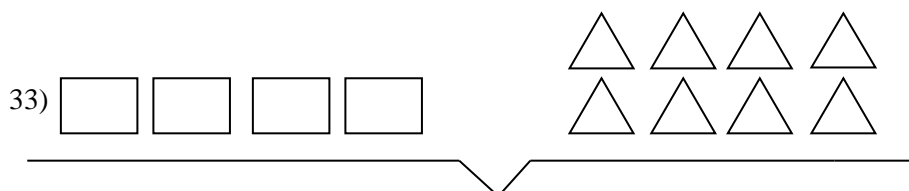
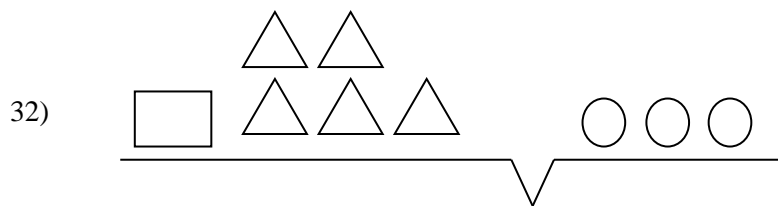
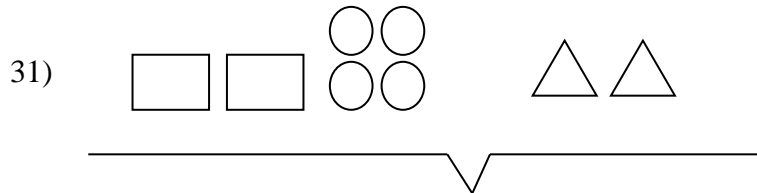
Model each equation for $\square = x$; $\bigcirc = 1$; $\triangle = (-1)$ in the boxes. Solve and check each equation. Show all steps.

28) $x + 4 = 6$

29) $3x = 9$

30) $x - 4 = (-7)$

Write and solve the equation for each situation if $\square = x$; $\bigcirc = 1$; $\triangle = (-1)$. Show all steps.



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Answer Key

1. (-7)
2. (-5)
3. $\frac{5}{8}$
4. (-18.34)
5. (-36)
6. 4.57
7. 4.5
8. (-15)
9. (-6)
10. (-14.28)
11. (-54)
12. 92
13. 3
14. (-2)
15. 18
16. 175
17. $25 = 8 + 5.2 + s$; 11.8 feet
18. $(-109) = t - 183.6$; 74.6° F
19. $28.12 = t - 0.14$; 28.26 seconds
20. $6.75 = 0.75t$; 9 tokens
21. $123.75 = 7.50h$; 16.5 hours
22. $70 = \frac{m}{4.5}$; 315 miles
23. $21 = \frac{s}{3}$; 63 students
24. $297 - 17 = 5s$; 56 seashells
25. $60 = 12 + 2u$; 24 meters
26. $23.85 = 12.60 + 2.25m$; 5 magazines
27. $9 = \frac{e}{2} - 8$; 34 strokes
28. Check model; 2
29. Check model; 3
30. Check model; (-3)
31. $2x + 4 = 2$; (-1)
32. $x - 5 = 3$ or $x + (-5)$; (8)
33. $4x = (-8)$; (-2)