

# Middle School Math Practice Worksheet

Fifty grades 6-8 math questions across fractions, decimals, percents, integers, ratios, unit rates, expressions, equations, inequalities, coordinate planes, geometry, measurement, data, statistics, probability, and written reasoning.

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|-----------|----|-----------------|---|---------|----|
| QUESTIONS | 50 | MULTIPLE CHOICE | 5 | WRITTEN | 45 |
|-----------|----|-----------------|---|---------|----|

## Instructions

Show setup for word problems, simplify fractions when possible, label units for measurement answers, and check equations by substitution.

**1**Simplify  $\frac{3}{4} + \frac{2}{3}$ .

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**2**Simplify  $\frac{5}{6} - \frac{1}{4}$ .

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**3**Multiply  $\frac{2}{5}$  by 15.

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**4**Divide  $\frac{3}{4}$  by  $\frac{1}{8}$ .

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**5**

Write 0.375 as a fraction in simplest form.

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**6**

Write 42% as a decimal.

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**7**

Find 35% of 80.

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**8**

A shirt costs \$30 and is discounted by 20%. Find the sale price.

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**9**Compute  $-7 + 12$ .

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**10**Compute  $-4 - 9$ .

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- 11** Compute  $(-6)(8)$ .

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- 12** Compute  $-45 \div 5$ .

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- 13** Which number is farthest left on a number line?

- A) -8
- B) -3
- C) 0
- D) 5

- 14** Which expression equals  $6^2$ ?

- A)  $6 + 2$
- B)  $6 \times 2$
- C)  $6 \times 6$
- D)  $2 \times 2 \times 2 \times 2 \times 2$

- 15** Evaluate  $3^2 + 4^2$ .

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- 16** The ratio of red marbles to blue marbles is 3:5. If there are 24 red marbles, how many blue marbles are there?

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- 17** A car travels 180 miles in 3 hours. Find the unit rate in miles per hour.

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- 18** Solve the proportion  $\frac{4}{7} = \frac{x}{28}$ .

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- 19** A recipe uses 2 cups of flour for 5 servings. How many cups are needed for 15 servings?

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- 20** A unit rate compares a quantity to:

- A) 0 units
- B) 1 unit
- C) 10 units
- D) 100 units

- 21** Simplify the expression  $4x + 7x - 3$ .

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- 22** Use the distributive property to expand  $5(x + 6)$ .

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- 23** Evaluate  $2a + 3$  when  $a = 7$ .

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- 24** Solve  $x + 9 = 23$ .

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- 25** Solve  $y - 6 = 18$ .

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**26**Solve  $5m = 45$ .

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**27**Solve  $n/4 = 11$ .

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**28**Solve  $3x + 5 = 20$ .

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**29**Solve  $4x - 7 = 21$ .

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**30**Solve  $2(x + 3) = 18$ .

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**31**In  $8 + 2x$ , the coefficient of  $x$  is:

- A) 2
- B) 8
- C) 10
- D)  $x$

**32**Solve  $x - 4 > 9$ .

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**33**Solve  $2x \leq 18$ .

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**34**Solve  $-3x > 12$ .

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**35**Plotting  $(4, -2)$  means move 4 units right and how many units vertically?

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**36**Find the slope between  $(1, 3)$  and  $(5, 11)$ .

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**37**Find the missing  $y$ -value in the table if  $y = 3x$  and  $x = 7$ .

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**38**The point  $(0, 0)$  is called the:

- A)  $x$ -axis
- B)  $y$ -axis
- C) origin
- D) quadrant

**39**

Find the area of a rectangle with length 12 cm and width 7 cm.

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**40**

Find the perimeter of a rectangle with length 9 in. and width 4 in.

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- 41** Find the area of a triangle with base 10 ft and height 6 ft.

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- 42** Find the circumference of a circle with radius 7, using  $\pi = 22/7$ .

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- 43** Find the volume of a rectangular prism with length 8 cm, width 5 cm, and height 3 cm.

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- 44** Convert 3 feet to inches.

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- 45** Find the mean of 6, 8, 8, 10, and 13.

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- 46** Find the median of 4, 9, 2, 12, and 7.

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- 47** Find the range of 15, 8, 22, 11, and 19.

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- 48** A bag has 3 red, 5 blue, and 2 green counters. Find the probability of choosing blue.

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- 49** Explain why solving  $4x - 7 = 21$  should start by adding 7 to both sides.

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- 50** A student says 30% of 50 is 30. Explain the mistake and correct answer.

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## Answer key

Direct answers only, in question order. Work the set first, then check.

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|-------------------------------|---------------|------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. $17/12$ or $1\frac{5}{12}$ | 2. $7/12$     | 3. 6             | 4. 6                                                                                   | 5. $3/8$                                                                                          |
| 6. 0.42                       | 7. 28         | 8. \$24          | 9. 5                                                                                   | 10. -13                                                                                           |
| 11. -48                       | 12. -9        | 13. A) -8        | 14. C) $6 \times 6$                                                                    | 15. 25                                                                                            |
| 16. 40                        | 17. 60 mph    | 18. 16           | 19. 6                                                                                  | 20. B) 1 unit                                                                                     |
| 21. $11x - 3$                 | 22. $5x + 30$ | 23. 17           | 24. 14                                                                                 | 25. 24                                                                                            |
| 26. 9                         | 27. 44        | 28. 5            | 29. 7                                                                                  | 30. 6                                                                                             |
| 31. A) 2                      | 32. $x > 13$  | 33. $x \leq 9$   | 34. $x < -4$                                                                           | 35. 2 units down                                                                                  |
| 36. 2                         | 37. 21        | 38. C) origin    | 39. 84 square cm                                                                       | 40. 26 in.                                                                                        |
| 41. 30 square ft              | 42. 44        | 43. 120 cubic cm | 44. 36 inches                                                                          | 45. 9                                                                                             |
| 46. 7                         | 47. 14        | 48. $1/2$        | 49. Adding 7 undoes the subtraction and keeps both sides balanced, leaving $4x = 28$ . | 50. 30% means 0.30, so $0.30 \times 50 = 15$ . The student used the percent number as the answer. |

## Error log

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Bring this page to your next session so the tutor can start from what actually blocked you.

**Questions I answered incorrectly:**

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**Was it arithmetic, setup, vocabulary, graphing, or units?**

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**The first topic I want to review in my next Middle School Math session:**

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