

Pre-Algebra Practice Worksheet

Fifty questions spanning integers, fractions and percents, ratios, one- and two-step equations, exponents, geometry, and basic statistics. Questions 45 to 50 ask for written working.

QUESTIONS	50	MULTIPLE CHOICE	9	WRITTEN	41
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Instructions

Work without a calculator unless a question needs one. Show each step. Circle anything you guessed.

1 $-6 + 9 = ?$

2 $-14 - 5 = ?$

3 $-3 \times -7 = ?$

4 $-24 \div 6 = ?$

5 $8 - (-5) = ?$

6 Which expression equals -12?

- A) -4×3
- B) 4×3
- C) -4×-3
- D) $-4 \div -3$

7 Write $\frac{3}{8}$ as a decimal.

8 Write 0.6 as a percent.

9 What is 30% of 90?

10 A \$50 shirt is discounted 20%. What is the sale price?

- 11** A price rises from \$40 to \$50. What is the percent increase?

A) 10%
B) 20%
C) 25%
D) 50%

- 12** $\frac{1}{3} + \frac{1}{6} = ?$ (as a fraction)

- 13** $\frac{3}{4} - \frac{1}{2} = ?$ (as a fraction)

- 14** $\frac{2}{5} \times \frac{5}{8} = ?$ (as a fraction)

- 15** $\frac{3}{4} \div \frac{1}{2} = ?$ (as a fraction)

- 16** A recipe uses 2 cups flour for 3 cups sugar. At the same ratio, how much flour for 9 cups sugar?

A) 4 cups
B) 5 cups
C) 6 cups
D) 12 cups

- 17** A car travels 240 miles in 4 hours. What is its unit rate in miles per hour?

- 18** Solve the proportion: $\frac{5}{8} = \frac{x}{40}$. Find x.

- 19** Simplify: $4x + 7 - 2x + 3$.

- 20** Simplify: $5(2x - 3) + 4$.

- 21** Solve: $x + 9 = 4$.

- 22** Solve: $\frac{x}{3} = -6$.

- 23** Solve: $2x + 5 = 17$.

- 24** Solve: $4x - 3 = 21$.

- 25** Solve: $-3x + 2 = 14$.

26 Solve and choose the correct set: $x - 4 < 6$.

- A) $x < 2$
- B) $x < 10$
- C) $x > 10$
- D) $x < -2$

27 Solve: $-2x > 8$. (careful with the sign)

- A) $x > -4$
- B) $x < -4$
- C) $x > 4$
- D) $x < 4$

28 Simplify: $x^3 \times x^5$. (write as x to a power)

29 Simplify: $(x^2)^4$. (write as x to a power)

30 Evaluate: $\sqrt[4]{81}$.

31 Evaluate: $\sqrt[3]{144}$.

32 Write 0.00052 in scientific notation.

- A) 5.2×10^{-4}
- B) 5.2×10^4
- C) 52×10^{-5}
- D) 5.2×10^{-3}

33 Write 6.3×10^5 in standard form.

- A) 6,300
- B) 63,000
- C) 630,000
- D) 6,300,000

34 A right triangle has legs 9 and 12. Find the hypotenuse.

35 A right triangle has a leg of 5 and hypotenuse of 13. Find the other leg.

36 Find the area of a triangle with base 10 and height 6.

37 Find the circumference of a circle with radius 7. (use $\pi = 22/7$)

38 Find the area of a rectangular prism-shaped box: length 5, width 4, height 3 (volume).

39 A bag has 4 red and 6 blue marbles. What is the probability of drawing red?

- A) $4/10$
- B) $6/10$
- C) $4/6$
- D) $1/4$

40 Two coins are flipped. What is the probability both land heads? (as a fraction)

- 41** Find the mean of: 5, 9, 12, 14.

- 42** Find the median of: 3, 7, 8, 15, 20.

- 43** Which measure is least affected by an outlier?
- A) Mean
 - B) Median
 - C) Sum
 - D) Range

- 44** A jacket costs \$60 plus 8% sales tax. What is the total cost?

- 45** Convert 5 feet to inches (1 foot = 12 inches).

- 46** A number is tripled, then 4 is added, giving 22. What is the number? Show your equation and solve it.

- 47** A rectangular garden is twice as long as it is wide, and its perimeter is 36 feet. Find the width. Show your work.

- 48** A jacket's price drops from \$80 to \$60. Find the percent decrease and explain your method.

- 49** Explain why $-2 \times -2 \times -2$ is negative while $(-2)^2$ is positive.

- 50** A recipe for 4 people needs $\frac{3}{4}$ cup rice. Write and solve a proportion for 10 people.

Answer key

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

1. 3	2. -19	3. 21	4. -4	5. 13
6. A) -4×3	7. 0.375	8. 60%	9. 27	10. 40
11. C) 25%	12. $\frac{1}{2}$	13. $\frac{1}{4}$	14. $\frac{1}{4}$	15. $\frac{3}{2}$
16. C) 6 cups	17. 60	18. 25	19. $2x + 10$	20. $10x - 11$
21. -5	22. -18	23. 6	24. 6	25. -4
26. B) $x < 10$	27. B) $x < -4$	28. x^8	29. x^8	30. 9
31. 12	32. A) 5.2×10^{-4}	33. C) 630,000	34. 15	35. 12
36. 30	37. 44	38. 60	39. A) $\frac{4}{10}$	40. $\frac{1}{4}$
41. 10	42. 8	43. B) Median	44. 65	45. 60
46. 6	47. 6	48. 25%	49. Three negative factors give a negative product; two negative factors give a positive product.	50. $1 \frac{7}{8}$ cups

Error log

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

Questions I answered incorrectly:

Was it the concept, the setup, or the arithmetic?

The single topic I want to start the next session with:
