THIRD SPACE LEARNING

7th Grade Math Problems

28 7th grade math problems with answers and worked examples

7th grade

How to use this resource

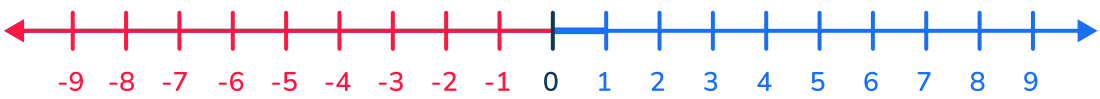
We've created 28 7th grade math problems for your classroom. These are suitable for use as:

- Additional practice before an assessment
- A Do Now activity
- An Exit Slip to check for understanding after a lesson

Math teachers designed these problems to build on students' math skills and help to prepare them for the rigor expected ahead in 8th grade and in high school courses like Algebra, Geometry, and Statistics.

Four operations

1. Solve −4 + 10 . Use the number line.



Solution:

- 6

2. Solve: −8 − 12. Use the number line.

Solution:

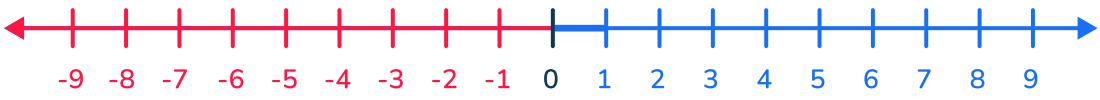
- -20

3. Solve: 4(−3)(−2)

Solution:

- 24

4. Bill said the answer to −3 − 12 is 9. What mistake did he make? What is the correct answer?



Solution:

- Bill knows that the opposite of subtraction is addition, but he forgot to take the opposite of 12, so he re-wrote the problem as −3 + 12. Since we are subtracting 12 from −3, the answer is the same as −3 + −12, which is −15.

Order of operations

5. Solve: $2(10 - 8) \div 2 + 4$

Solution:

- $2(10 - 8) \div 2 + 4$
  $2(2) \div 2 + 4$
  $4 \div 2 + 4$
  $2 + 4$
  6

6. Solve: $(3 + 10 \div 2 - 6) \times 6$

Solution:

- $(3 + 10 \div 2 - 6) \times 6$
  $(3 + 5 - 6) \times 6$
  $(8 - 6) \times 6$
  2×6
  12

7. Solve: $-5(8) \div 2 + 6$

Solution:

- $-5(8) \div 2 + 6$
  $-40 \div 2 + 6$
  $-20 + 6$
  -14

8. Solve: $(-2)^3 - 2 + 6 \div 3$

Solution:

- $(-2)^3 - 2 + 6 \div 3$
  $-8 - 2 + 6 \div 3$
  $-8 - 2 + 2$
  $-10 + 2$
  -8

Percentages

9. Isabella got 16 out of 40 questions wrong on her quiz. What percent did she get correct?

Solution:

- $\frac{16}{40}$ can be simplified to $\frac{2}{5}$, which is equivalent to $\frac{40}{100}$ or 40%. If Isabella got 40% incorrect, she got 60% correct (100 - 40 = 60).

10. Without doing any computation, explain whether $\frac{38}{72}$ is greater than or less than 50%.

Solution:

- $\frac{38}{72}$ is greater than 50%. $\frac{36}{72}$ is equivalent to $\frac{1}{2}$, which is equivalent to 50%. Since 38 is a little greater than 36, $\frac{38}{72}$ is a little greater than 50%.

11. Put the following in order from least to greatest: $\frac{3}{4}$, 76%, 0.68, $\frac{3}{5}$, $\frac{35}{50}$, 0.702

Solution:

- $\frac{3}{5}$, 0.68, $\frac{35}{50}$, 0.702, $\frac{3}{4}$, 76%

12. A store marked all shoes on sale for 30% off. What percent will Sam pay for shoes? Explain.

Solution:

- Sam will pay 70% for shoes. The full price is 100%, so if 30% is saved, the remaining 70% will be the sales price.

Proportional relationships

12. $\frac{5}{6} = \frac{x+2}{15}$

Solution:

$6(x+2) = 5(15)$

$6x + 12 = 75$

$-12 \quad -12$

$\frac{6x}{6} = \frac{63}{6}$

$x = 10.5$

13. Three out of every five students are wearing jeans. If there are 20 students in total, how many are wearing jeans?

Solution:

$\frac{3}{5} = \frac{x}{20}$

$3(20) = 5x$

$60 = 5x$

$12 = x$

14. Three out of every five students are wearing jeans. If there are 20 students in all, how many are not wearing jeans?

Solution:

From the last problem, we saw that $\frac{3}{5}$ is the same as the 12 students wearing jeans. If there are 20 students total, we can subtract the 12 wearing jeans from the 20 total to find that 8 are not wearing jeans. We could also set up this proportion and solve to get 8.

$$\frac{2}{5} = \frac{x}{20}$$

15. A museum requires 12 chaperones for the 60 students attending the field trip. How many students are assigned to each chaperone?

Solution:

$\frac{12}{60} = \frac{1}{x}$

$12x = 60(1)$

$12x = 60$

$x = 5$

Each chaperone will have a group of 5 students.

One-step equations and two-step equations

16. Solve: $x + 7.1 = 15.9$

Solution:

$$x + 7.1 = 15.9$$
$$-7.1 \quad -7.1$$
$$x = 8.8$$

17. Solve: $x - 63 = 106.75$

Solution:

$$x - 63 = 106.75$$
$$+63 \quad +63$$
$$x = 169.75$$

18. Solve: $6(x + 3) = -6$

Solution:

$$6x + 18 = -6$$
$$-18 \quad -18$$
$$\frac{6x}{6} = \frac{-24}{6}$$
$$x = -4$$

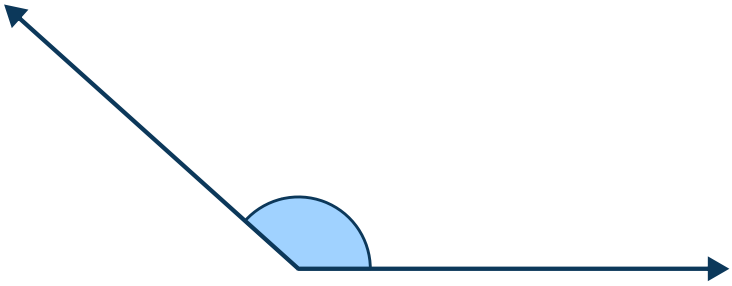
19. Solve: $0.5x + 10 = 36$

Solution:

$$0.5x + 10 = 36$$
$$-10 \quad -10$$
$$0.5x = 26$$
$$x = 52$$

Geometry

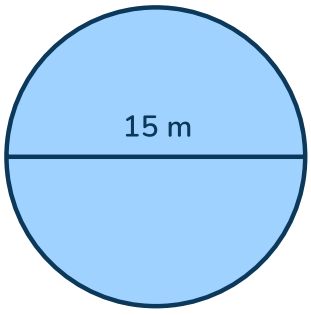
20. Madison measured this angle with her protractor and said “It is 60°.” Without measuring the angle, Bella said she could tell Madison’s answer was incorrect. How did Bella know this?



Solution:

- Bella knew this angle could not be 60° because this angle is obtuse but a 60° angle is acute.

21. Find the circumference of the circle.

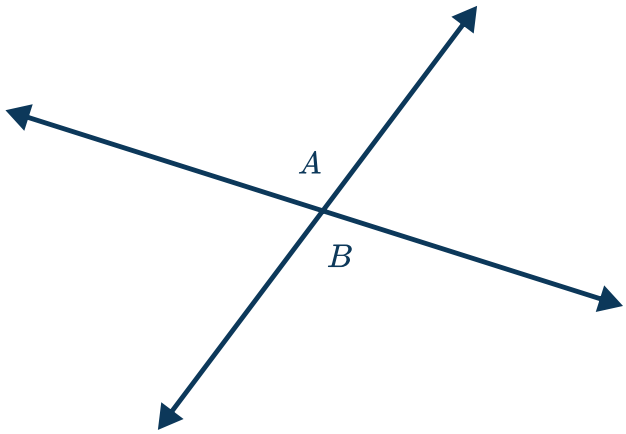


Solution:

- $C = \pi d$
  $C = 15\pi$

Geometry

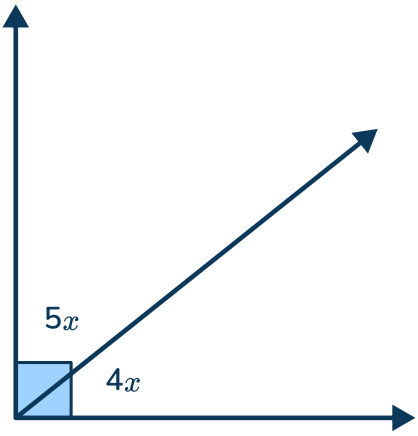
22. Use the figure to fill in the blanks:
Angles A and B are _____ angles so their measures are _____.



Solution:

- Angles A and B are vertical angles so their measures are equal.

23. Find the value of x.

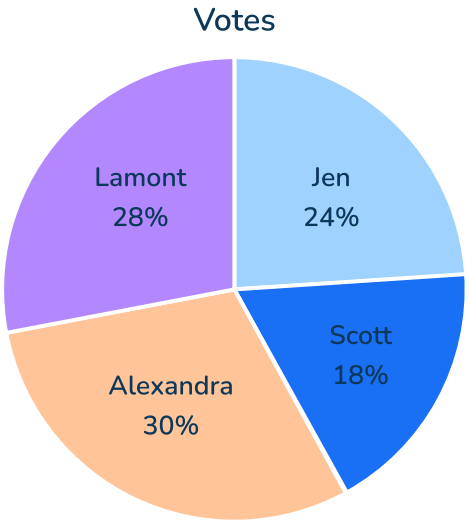


Solution:

- $5x + 4x = 90$
$9x = 90$
$x = 10$

Math word problems

24. The 7th Graders at Marxville Middle School voted for their student council representatives. There were 200 votes cast in all. How many votes did the winner get?



Solution:

- Alexandra won the election with 30% of the votes. To find 30% of the 200 total votes, we can multiply 0.3 (200) to discover that she got 60 votes in all.

25. Brian runs every 12 days and Stella every 8 days. Both Brian and Stella ran today. How many days will it be before they both run on the same day again?

Solution:

- This is a Least Common Multiple problem. Brian runs on days 12, 24, 36, 48... and Stella runs on days 8, 16, 24, 32..., so they will both run again on Day 24.

Math word problems

26. Mr. Orlando is planting his vegetable garden this summer. He plants $\frac{3}{4}$ of the garden with peppers and $\frac{1}{4}$ with tomatoes. Of the peppers, $\frac{1}{3}$ are red peppers. What fraction of the entire garden will be red peppers?

Solution:

- Red peppers will make up $\frac{1}{3}$ of $\frac{3}{4}$ (the pepper section) of the garden. $\frac{1}{3} \times \frac{3}{4} = \frac{1}{4}$, so $\frac{1}{4}$ of the entire garden will consist of red peppers.

27. Will the product of -45(96) be positive or negative? Without solving, how do you know?

Solution:

- The answer will be negative. Multiplying a negative number by a positive one always leads to a negative product.

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- Scaffolded learning to close gaps

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Michelle Craig, Instructional Coach,
Sherwood Forest Elementary, Washington

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