

Name:

AXIOM CHALLENGE

5th grade; Spring 2026

$$\begin{array}{r} 7.6 \\ \times 76 \\ \hline \end{array}$$

$$\begin{array}{r} 7.9 \\ \times 39 \\ \hline \end{array}$$

$$\begin{array}{r} 2.6 \\ \times 58 \\ \hline \end{array}$$

$$\begin{array}{r} 1.7 \\ \times 41 \\ \hline \end{array}$$

$$\begin{array}{r} 4.2 \\ \times 14 \\ \hline \end{array}$$

$$61 \times 38\% =$$

$$43 \times 49\% =$$

$$75 \times 29\% =$$

$$52 \overline{)46.8}$$

$$39 \overline{)19.5}$$

$$65 \overline{)19.5}$$

$$18 \overline{)5.4}$$

$$38 \overline{)3.8}$$

$$\frac{5}{70} \times 2 =$$

$$\frac{3}{57} \times 2 =$$

$$\frac{2}{47} \times 4 =$$

$$\frac{5}{9} \div \frac{5}{8} =$$

$$\frac{3}{11} \div \frac{2}{7} =$$

$$\frac{4}{6} \div \frac{1}{10} =$$

$$9^2 =$$

$$14^2 =$$

$$3^2 =$$

Find the GCD (greatest common factor/divisor) of the numbers in each set:

$$\{ 64, 44 \} =$$

$$\{ 160, 158 \} =$$

$$\{ 48, 102 \} =$$

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3) Is a rectangle always a square?

- a) Yes
- b) No

4) Sophie tried to evaluate an expression. Here is her work:

$$9^2 \div 3^2 \cdot 2 + 7 \cdot 6$$

$$= 81 \div 9 \cdot 2 + 7 \cdot 6 \quad \text{Step 1}$$

$$= 9 \cdot 2 + 7 \cdot 6 \quad \text{Step 2}$$

$$= 18 + 7 \cdot 6 \quad \text{Step 3}$$

$$= 25 \cdot 7 \quad \text{Step 4}$$

$$= 175 \quad \text{Step 5}$$

Is Sophie's work correct? Yes or no? Why or why not?

5) Solve the following equations:

$$g + 10.51 = 15.8$$

$$0.6 = q / 10.8$$

$$2/3 = g - 1/4$$

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6) Scott's baseball team is raising money to buy new equipment. The team has raised money by taking donations and by having a car wash. The team earned \$48.90 from washing cars. Overall, they raised a total of \$95.65.

a) Let d represent how much money the team received from donations. **Which equation models the problem?**

a) $d - 48.90 = 95.65$

b) $d + 48.90 = 95.65$

c) None of the above

b) Solve this equation to find how much money the team received from donations.

$d = \$$ _____.

7) Which is an outlier? (Circle your answer.)

18, 28, 60, 63, 69, 72, 74, 78, 993.

8) I am a 4 digit number. My tens digit is 5 less than my ones digit, my tens digit is 3 more than my hundreds digit, and my thousands digit is 7 more than my hundreds digit. I do not have any zeros. **What number am I?**

I am _____

9) Ben has \$75 in his account at Dedham Savings. He spends $\frac{2}{5}$ of his money and then deposits \$18. **How much money does he have now?**

\$_____.

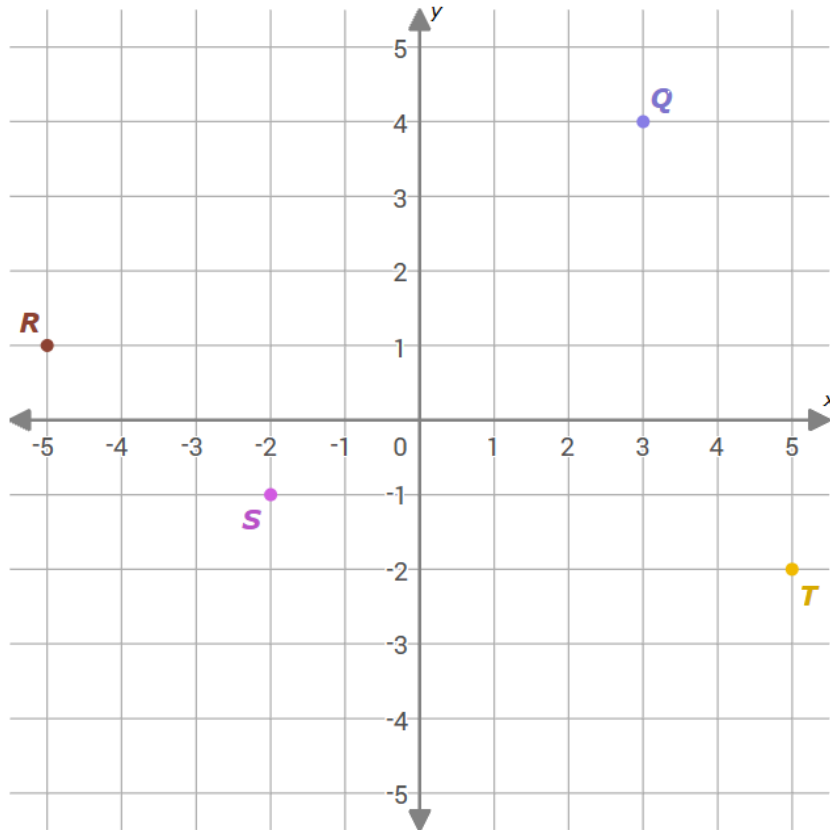
10) Answer the following questions about quadrants in the coordinate plane.
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a) What quadrant is point S in?



Quadrant _____ (please answer using **Roman Numerals**)

b) Which point is in Quadrant I?

- a) Point Q
- b) Point R
- c) Point S
- d) Point T

11) Ryan is on the diving team at school. The platform he uses is about 5 yards above the pool. On his best dive, he jumps an extra foot in the air before doing a flip. **How many feet is he above the pool at the highest point of his jump?**

_____ feet.

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1) Which process is caused by *cooling*?

- a) Melting
- b) Freezing

2) Complete the following sentences about energy transformation:

Word bank: light energy, kinetic energy (motion energy), heat energy

Note: some words may be not used at all, and some may be used more than once

Cymbals crashing is an example of _____ energy converting to sound energy.

A lightning bolt flashing in the sky is an example of _____ energy converting to _____ energy.

On a sunny afternoon, a metal park bench feels warm to the touch. This is an example of _____ energy converting to _____ energy.

3) Marsupials are a group of animals that have similar traits. The following traits can be used to identify marsupials:

- They have offspring that lives in their mother's pouch after birth
- They have fur or hair

Using this, which of the following is most likely a marsupial?

- a) Humans
- b) Kangaroos
- c) Wels catfish
- d) Dalmatian dog

4) Are the following traits inherited or acquired? Write your answer next to the sentence.

- a) Eduardo plays golf.

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- b) Emma has blue eyes.
- c) Bridget has a scar on her left elbow.
- d) Jenna can drive a car.

5) Select the 2 mixtures.

- a) Milkshakes
- b) Water vapor
- c) Oxygen
- d) Copper

Open Responses:

1) What are the 3 states of matter? Give examples (and properties of their states of matter if you can).

2) If you leave an ice cube in the sun and another in the shade, which one will melt faster and why?