

**Kumon Math Challenge – Sample Questions**  
**Grade 8**

1. At what point do these lines intersect?

$$3x + y = 5$$

$$2x + 3y = 1$$

- A. (5, 1)
- B. (2, -1)
- C. (-1, 2)
- D. (1, -2)

2.  $1 - \left(\frac{2}{3} - \frac{1}{5}\right) \div \frac{1}{4} =$

- A.  $\frac{6}{15}$
- B.  $-\frac{9}{15}$
- C.  $\frac{4}{15}$
- D.  $-\frac{13}{15}$

3.  $8^{\frac{1}{3}} + 4^{\frac{1}{2}} - 27^{\frac{1}{3}} =$

- A.  $-4\frac{1}{3}$
- B. 7
- C. 1
- D. -15

**Solve the following system of equations for  $x$  and  $y$ .**

4.  $9x - 5y = 10$

$$6x + 3y = 7$$

- A.  $x = 1\frac{2}{37}; y = \frac{1}{2}$
- B.  $x = 1\frac{4}{57}; y = \frac{1}{14}$
- C.  $x = 1\frac{8}{57}; y = \frac{1}{19}$
- D.  $x = -2; y = \frac{1}{5}$

**Solve the following inequality.**

5.  $2(x + 3) \leq 3(2x - 1)$

- A.  $x \geq 2\frac{1}{4}$
- B.  $x \leq 1\frac{1}{4}$
- C.  $x \leq 2\frac{1}{4}$
- D.  $x \geq 4$

6. Thomas has a total of \$3.17 in coins in his pocket. There are twice as many nickels as pennies and 10 more dimes than nickels. How many of each type of coin does Thomas have?

- A. 7 pennies, 14 nickels, 24 dimes
- B. 4 pennies, 8 nickels, 25 dimes
- C. 10 pennies, 10 nickels, 26 dimes
- D. 5 pennies, 10 nickels, 20 dimes

**Kumon Math Challenge – Sample Questions  
Grade 8**

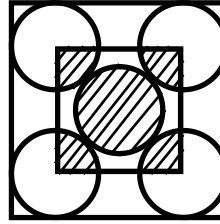
7. A class of students is taking a test with only 2 questions. 15 students got question #1 right. 21 students got question #2 correct. 11 students got both #1 and #2 correct, and 6 students got neither correct. How many students took the test?

- A. 20 students
- B. 53 students
- C. 35 students
- D. 31 students

**Continue the Pattern.**

8. 1      3      15      105...

- A. 735
- B. 945
- C. 1,050
- D. 525



9. In the above picture, all the circles are the same size. The smaller square joins the centers of the four outer circles. What is the ratio of the area of the shaded parts of all five circles to the area of the un-shaded parts of the five circles?

- A. 3:2
- B. 2:3
- C. 1:2
- D. 1:3

10. What is the next shape in the sequence?



- A.
- B.
- C.
- D.

**Kumon Math Challenge – Sample Questions  
Grade 8**

**ANSWER KEY**

1. B
2. D
3. C
4. C
5. A
6. A
7. D
8. B
9. B
10. C