

Stage I Question Set 7

- 1) 20 questions
- 2) Completion time 30 to 40 minutes
- 3) Calculators are permitted
- 4) No penalty for incorrect answers
- 5) Diagrams are not drawn to scale

QUESTION #1:

What is the smallest number in this set?

$\{5, 4.\bar{9}, 10 \div 2, (1,000 - 995)\}$

- a) 5 b) $4.\bar{9}$ c) $10 \div 2$ d) $(1,000 - 995)$ e) All the elements are the same.

QUESTION #2:

$x + y = 36$. If $x = -54$, what does y equal?

- a) $y = -18$ b) $y = 90$ c) $y = 18$ d) $y = 36$ e) none of the above

QUESTION #3:

Samantha spent twice as much on lunch today as she did yesterday. Today's lunch cost \$9.72. What did yesterday's lunch cost?

- a) \$4.86 b) \$14.58 c) \$10.72 d) \$4.36 e) none of the above

QUESTION #4:

Evaluate $(\sqrt{2})^7$

- a) 128 b) 14 c) $4\sqrt{2}$ d) $8\sqrt{2}$ e) none of the above

QUESTION #5:

What is the average of 10.1 and 101?

- a) 55.05 b) 111.1 c) 55.1 d) 60 e) none of the above

QUESTION #6:

Sandy started work at 8:00 in the morning. 5000 seconds later, she went home due to a power outage. What time did she leave, to the nearest minute?

- a) 10:40 a.m. b) 9:15 p.m. c) 8:40 a.m. d) 9:23 a.m. e) none of the above

QUESTION #7:

Which element of the set has the largest absolute value?

$\{-5, -1000, -100, -2(-250), 999\}$

- a) -5 b) -1000 c) -100 d) $-2(-250)$ e) 999

QUESTION #8:

The larger square has an area that is twice that of the smaller square. If the larger square has an area of 16 units², what is the side length of the smaller square in units?



- a) 2 units b) 4 units c) $2\sqrt{2}$ units d) $\sqrt{2}$ units e) none of the above

QUESTION #9:

{1,5,9,13,...} is a sequence, as is {7, 14, 21, 28,...}. What is the minimum number that is an element of both sequences?

- a) 28 b) 35 c) 21 d) 105 e) none of the above

QUESTION #10

The area of Anastasia's rectangular-shaped studio apartment is 14m². The length is 4m. What is the perimeter?

- a) 13.5m² b) 15m² c) 15m d) 3.5m e) none of the above

QUESTION #11

Eileen got five tests back on the same day. She received the following marks:

- 60/72 in biology
- 79% in English
- 81/85 in mathematics
- 93/103 in physics
- 91% in history

Which test did she score the lowest on?

- a) biology b) English c) mathematics d) physics e) history

QUESTION #12

64 is the cube of 4, and the square of 8. What is the next natural number that is also a perfect cube, and a perfect square?

- a) 144 b) 81 c) 256 d) 128 e) none of the above

QUESTION #13:

If $\frac{7}{8}$ of a number is 56, then what is $\frac{8}{7}$ of that number?

- a) 64 b) 56 c) 72 d) $73 \frac{1}{7}$ e) none of the above

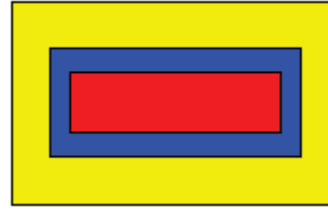
QUESTION #14:

Which of the following are possible values for the three sides of a triangle?

- a) {5,6,12} b) {4,3,7} c) {1,2,1} d) {7.5,2.5,10} e) none of the above

QUESTION #15

The largest rectangle has dimensions of 3 cm x 5 cm. The middle rectangle has dimensions of 1.5 cm x 4 cm. The smallest rectangle has dimensions of 1 cm x 3 cm. Which of the following statements are true? (Note: The outer region is yellow, the middle region is blue, and the inner region is red.)



- a) The yellow-shaded region is greater than the red-shaded region is greater than the blue-shaded region.
- b) The red-shaded region is greater than the yellow-shaded region is greater than the blue-shaded region.
- c) The blue-shaded region is less than the red-shaded region is less than the yellow-shaded region.
- d) a & c
- e) none of the above

QUESTION #16:

In Anton's art class, 17 of the students specialize in painting and 18 specialize in photography. If there are 30 students in the class, how many specialize in both painting and photography, if each student takes at least one of the two?

- a) 7 b) 5 c) 8 d) 4 e) none of the above

QUESTION #17

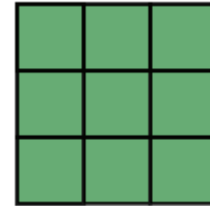
In a magic square, the rows, columns and diagonals each sum up to the same number. Find the value of N in this magic square.

14	9	10
N		
	13	

- a) 12 b) 7 c) 11 d) 8 e) none of the above

QUESTION #18:

The square shown has dimensions 3 x 3, with 9 unit squares. How many squares with area of 4 units² are contained within the figure?



- a) 6 b) 4 c) 8 d) 3 e) none of the above

QUESTION #19:

In his job as a company firefighter, Joseph works a rotation schedule with 4 days of work with 12-hour shifts, followed by 4 days off. If he begins a rotation on Sunday, April 21, which of the following statements are true?

- a) Joseph will work Friday, April 26.
- b) Joseph will work Sunday, April 28.
- c) Joseph will work Saturday, April 27.
- d) Joseph will work Wednesday, May 1.
- e) none of the above

QUESTION #20:

On a given day, a Canadian dollar = \$.72 U.S., an Australian dollar = \$.78 U.S., and a Singaporean dollar = \$.70 U.S. What does \$200 (Sg) equal in Australian currency, and what does \$200 (Can) equal in Australian currency, to the nearest penny?

- a) \$200 (Sg) equals \$179.49 (Au) and \$200 (Can) equals \$184.62 (Au).
- b) \$200 (Sg) equals \$222.86 (Au) and \$200 (Can) equals \$216.67 (Au).
- c) \$200 (Sg) equals \$140 (Au) and \$200 (Can) equals \$144 (Au)
- d) cannot be determined from the given information
- e) none of the above