

QUESTIONNAIRE Mathematics Test A. Population 1a and 1b

QUESTION 1

43.0 - 17.6 is equal to

QUESTION 2

How many seven-man teams can you make out of 7 nine-man teams?

- A. 7 B. 8 C. 9 D. 16 E. 63

QUESTION 3

$(22 \times 18) - (47 + 59)$ is equal to

- A. 290 B. 300 C. 384 D. 408 E. 502

QUESTION 4

In the figure shown below the little squares are all the same size and the area of the whole rectangle is equal to 1.

[Picture]

The area of the shaded part is equal to

- A. $\frac{2}{15}$ B. $\frac{1}{3}$ C. $\frac{2}{5}$ D. $\frac{3}{8}$ E. $\frac{1}{2}$

QUESTION 5

In the graph on the right, rainfall in inches is plotted for 13 weeks. The average weekly rainfall during the period is approximately

- A. 1 inch
B. 2 inches
C. 3 inches
D. 4 inches
E. 5 inches

[Picture]

QUESTION 6

The value of 2×3^3 is

- A. 30 B. 36 C. 64 D. 72 E. none of these

QUESTION 7

A box has a volume of 100 c.c. Another box is twice as long, twice as wide and twice as high. How many c.c. is the volume of the second box?

QUESTION 8

There is a brass plate of the shape and dimensions shown in the adjoining figure. What is its area in square inches ?

[Picture]

- A. 16
- B. 24
- C. 32
- D. 64
- E. 96

QUESTION 9

What is the square root of 12×75 ?

- A. 6.25
- B. 30
- C. 87
- D. 625
- E. 900

QUESTION 10

Three straight lines intersect as shown in the figure on the right. What is x equal to in degrees?

[Picture]

- A. 30
- B. 50
- C. 60
- D. 110
- E. 150

QUESTION 11

A shopkeeper has x lb. of tea in stock. He sells 15 lb. and then receives a new lot weighing $2y$ lb. What weight of tea in lbs. does he now have?

- A. $x - 15 - 2y$
- B. $x + 15 + 2y$
- C. $x - 15 + 2y$
- D. $x + 15 - 2y$
- E. none of the above

QUESTION 12

If $\frac{x}{2} < 7$, then

- A. $x < \frac{7}{2}$
- B. $x < 5$
- C. $x < 14$
- D. $x > 5$
- E. $x > 14$

QUESTION 13

A piece of tin with dimensions as shown is to be folded along the dotted lines to make a box. What is the volume, in cubic centimetres, enclosed in the box ?

[Picture]

QUESTION 14

If $\frac{4x}{12} = 0$, then x is equal to

- A. 0 B. 3 C. 8 D. 12 E. 16

QUESTION 15

The floor of a room is covered with wooden rectangular blocks. When blocks measuring a inches by b inches are used, M blocks are needed. If blocks fit exactly, how many blocks will be needed if each block measures x inches by y inches?

- A. $\frac{Mab}{xy}$ B. $\frac{ab}{Mxy}$ C. $\frac{(a + b)M}{x + y}$ D. $\frac{ab \cdot xy}{M}$ E. $\frac{Mxy}{ab}$

QUESTION 16

Which of the following sets of conditions is not sufficient for the congruence of $\triangle FGH$ and $\triangle PQR$ when f is less than g ?

[Note: the character $\hat{}$ denotes the character for an angle]

- A. $\hat{A} F = \hat{A} P$
 $g = q$
 $f = p$
- B. $\hat{A} F = \hat{A} P$
 $h = r$
 $\hat{A} G = \hat{A} Q$
- C. $g = q$
 $\hat{A} F = \hat{A} P$
 $h = r$
- D. $h = r$
 $g = q$
 $f = p$
- E. $f = p$
 $\hat{A} G = \hat{A} Q$
 $h = r$

[Picture]

QUESTION 17

Which of the following is (are) true?

- I. $(53 \times 73) \times 17 = 53 \times (73 \times 17)$
- II. $133 \times (78 + 89) = (133 \times 78) + 89$
- III. $133 \times (78 + 89) = (133 \times 78) + (133 \times 98)$

- A. I only
- B. II only
- C. III only
- D. I and II only
- E. I and III only

QUESTION 18

There are 227 boys in a school. Every boy in the school belongs to either the music club or the sports club, and some boys belong to both clubs. The music club has 120 members, and 36 of these are also members of the sports club. What is the total membership of the sports club ? _____

QUESTION 19

The lengths of the sides of triangle XYZ are 4, 7 and 10. If a similar triangle has a perimeter of 147, what is the length of its shortest side ? _____

QUESTION 20

In the solution of the following system of equations

$$\begin{array}{r} 2x + y = 7 \\ x - 4y = 4 \end{array} \begin{array}{l} \text{---} \\ | \\ \text{---} \end{array}$$

the value of y is equal to

- A. $\frac{5}{3}$
- B. $-\frac{9}{9}$
- C. $\frac{1}{9}$
- D. $-\frac{1}{3}$
- E. $-\frac{5}{3}$

QUESTION 21

Which of the following is true for any parallelogram ABCD which has an acute angle at B and diagonals AC and BD?

- A. $AB < BC$
- B. $AB = BC$
- C. $AB > BC$
- D. $AC < BD$
- E. None of them

QUESTION 22

The distance between two towns, A and B, is 150 kilometres. This distance is represented on a certain map by a length of 30 centimetres. The scale of this map is

A. $1 / 500,000$

B. $30 / 150$

C. $1 / 20,000$

D. $1 / 5,000$

E. $1 / 200,000$

QUESTION 23

Which of the following equals $7 \times (3 + 9)$?

A. $(7 \times 3) + (7 \times 9)$

B. $(7 \times 9) + (3 \times 9)$

C. $(7 \times 3) + (3 \times 9)$

D. 7×27

E. $21 + 9$