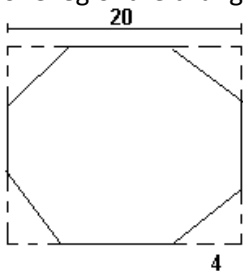


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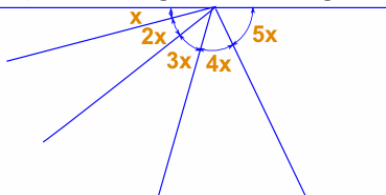
LEARNER'S MARK

HMC 2021 - 1ST ROUND

- 1) What is the value of $\frac{8}{5-1} \times (3 + 6) \times 3$?
A) 45 B) 33 C) 24 D) 54 E) 36
- 2) Which number should replace ■ in the equation $3 \times 24 \times 10 = 5 \times \blacksquare \times 18$?
A) 8 B) 9 C) 12 D) 14 E) 15
- 3) Product of two whole numbers is 360. What is the minimum difference?
A) 1 B) 2 C) 3 D) 4 E) 5
- 4) What is the percentage of $\frac{7}{20}$?
A) 35% B) 80% C) 28% D) 75% E) 60%
- 5) If $2021 = 43 \times 47$, then find the number of whole numbers which divide 2021 without leaving any remainder.
A) 12 B) 8 C) 6 D) 4 E) 2
- 6) N is one of the numbers below. N is such that when multiplied by 0.75 gives 3. Which number is equal to N?
A) 1.5 B) 4 C) 0.75 D) 3 E) 0.5
- 7) Martin knows that $111 \times 111 = 12321$. Which result does he get for 111×222 ?
A) 24642 B) 23432 C) 23454 D) 12343 E) 22211
- 8) If the length of the side of a square is doubled, what is the ratio of the areas of the original square to the area of the new square?
A) 1 B) $\frac{1}{2}$ C) $\frac{1}{4}$ D) 4 E) 6
- 9) Four congruent isosceles right triangles are cut from the 4 corners of a square with a side of 20 units. The length of one leg of the triangles is equal to 4 units. What is the area of the remaining octagon?



- A) 372 B) 368 C) 362 D) 358 E) 352
- 10) The angles on a straight line are x , $2x$, $3x$, $4x$ and $5x$. What is the size of the greatest of the five angles?



- A) 15 B) 60 C) 75 D) 90 E) 100
- 11) A car is traveling 96 kilometres per hour. How many meters does the car travel in one minute?
A) 1.6 B) 125 C) 160 D) 625 E) 1600



- 12) In a bag full of small balls, $\frac{1}{4}$ of these balls are green, $\frac{1}{8}$ are blue, $\frac{1}{2}$ are yellow and the remaining 26 white. How many balls are blue?

- A) 26 B) 28 C) 32 D) 12 E) 14



- 13) Andile's father gives him a 440 pages book as a gift. On the first day Andile reads 20 pages of the book and he likes it. If Andile reads 10 more pages every day, in how many days he will be able to finish the book?

- A) 6 B) 7 C) 8 D) 9 E) 10



14) Bongsi has a bucket full of water. The bucket has a hole in it and leaks water. He lets the bucket stand and measures the amount of water left in the bucket. The table shows the amount of water left in the bucket every 10 minutes. How much water would you expect to be left in the bucket after 1.5 hours?



Time(minutes)	0	10	20	30
Amount(milliliters)	6000	5800	5600	5400

- A) 4200 B) 4400 C) 4000 D) 3800 E) 4600

15) The petrol consumption of a car is 7 litres in 100 km. If one litre of petrol is R15, how much will a trip cost driving 4 hours with an average speed of 75 km per hour?

- A) 250 B) 265 C) 280 D) 300 E) 315



16) Number 808 has a horizontal line of symmetry. Which of these words also have a horizontal line of symmetry?

--- 808 ---

- A) POX B) LOX C) TOX D) BOX E) FOX

17) The panels of Peter' fence are full of holes. One morning, one of the panels fell flat on the floor. Which of the following could Peter see as he approaches his fence?



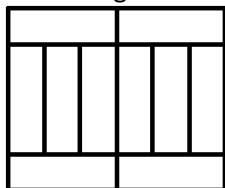
- (A) (B) (C) (D) (E)

18) Some of the digits in the following correct subtraction have been replaced by the letters A and B as shown. How much is $A + B$?

$$\begin{array}{r} B A B \\ - A 5 A \\ \hline 1 1 1 \end{array}$$

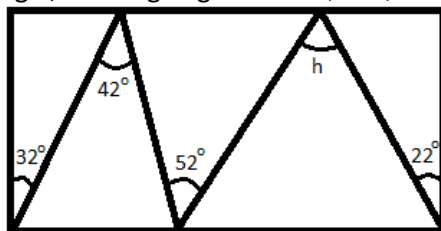
- A) 10 B) 11 C) 12 D) 13 E) 14

19) A large rectangle is made up of ten identical rectangles whose longest sides are 30 cm long. What is the perimeter of the large rectangle?



- A) 180 B) 200 C) 220 D) 240 E) 300

20) Mike draws a zig-zag line inside a rectangle, creating angles of 22° , 32° , 42° , 52° as shown. What is the size of angle h?



- A) 82 B) 76 C) 58 D) 72 E) 64