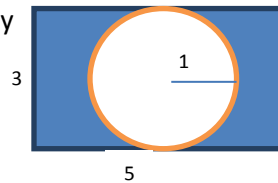
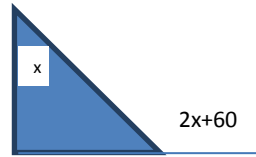


Mathematics (Group B)

Tick the best option of the following questions

- 1 If n is an odd integer, which one of the following is an even integer? pppp
 a) n^3 b) $n/4$ c) $2n+3$
 d) $n(n+3)$ e) \sqrt{n}
- 2 Which of the following fractions is greatest?
 a) $15/16$ b) $7/9$ c) $13/15$
 d) $8/9$ e) $10/11$
- 3 If $[x]$ denotes the area of a square with sides of length x , then which one of the following is equal to $[9] + [3]$?
 a) $[2]$ b) $[3]$ c) $[16]$
 d) $[27]$ e) $[81]$
- 4 If the remainder is 1 when m is divided by 2 and the remainder is 3 when n is divided by 4, which of the following must be true?
 a) m is even b) n is even
 c) $m+n$ is even d) mn is even
 e) m/n is even
- 5 In the figure, what is the value of x ?
 a) 30 b) 32
 c) 35 d) 40
 e) 47
- 6 What is the area of the shaded region formed by the circle and the rectangle in the figure?
 a) $15-2\pi$ b) $15-\pi$ c) 14
 d) $16-\pi$ e) 15π
- 7 In the standard coordinate system, which of the following points is the greatest distance from the origin:
 a) $(-4, -1)$ b) $(-3, 3)$ c) $(4, 0)$
 d) $(2, 3)$ e) $(0, 4)$



- 8 If $2 < x < 5$ and $3 < y < 5$, which of the following best describes $x-y$?
 a) $-3 < x-y < 2$ b) $-3 < x-y < 5$
 c) $0 < x-y < 2$ d) $3 < x-y < 5$ e) $2 < x-y < 5$
- 9 Let $x = .99$, $y = \sqrt{.99}$, and $z = (.99)^2$. Then which of the following is true?
 a) $x < z < y$ b) $z < y < x$ c) $z < x < y$
 d) $y < x < z$ e) $y < z < x$
- 10 $1/5$ of $.1$ percent equals:
 a) 2 b) $.2$ c) $.02$
 d) $.002$ e) $.0002$
- 11 If 4 percent of $(p+q)$ is 8 and p is a positive integer, what is the greatest possible value of q ?
 a) 196 b) 197 c) 198
 d) 199 e) 200
- 12 In travelling from city A to city B. John drove for 1 hour at 50 mph and for 3 hours at 60 mph. What was his average speed for the whole trip?
 a) 50 b) $53 \frac{1}{2}$ c) 55
 d) 56 e) $57 \frac{1}{2}$
- 13 The average of six consecutive integers in increasing order of size is $9 \frac{1}{2}$. What is the average of the last three integers?
 a) 8 b) $9 \frac{1}{2}$ c) 10
 d) 11 e) 19
- 14 If the ratio of y to x is equal to 3 and the sum of y and x is 80, what is the value of y ?
 a) -10 b) -2 c) 5
 d) 20 e) 60
- 15 If the degree measures of two angles of an isosceles triangle are in the ratio 1:3, what is the degree measure of the largest angle if it is not a base angle?
 a) 26° b) 36° c) 51°
 d) 92° e) 108°
- 16 $\frac{x^2-2x+1}{x-1} =$
 a) $x+1$ b) $-x-1$ c) $-x+1$
 d) $x-1$ e) $x-2$

- 17 What percent of 25 is 5?
a) 10% b) 20% c) 30%
d) 35% e) 40%
- 18 The population of a town was 12,000, and ten years later it was 16,000. What was the percent increase in the population of the town during this period?
a) $33\frac{1}{3}\%$ b) 50% c) 75%
d) 80% e) 120%
- 19 A drum contains 3 to 5 jars each of which contains 30 to 40 marbles. If 10 percent of the marbles are flawed, what is the greatest possible number of flawed marbles in the drum?
a) 51 b) 40 c) 30
d) 20 e) 12
- 21 How many ounces of a solution that is 30 percent salt must be added to a 50 ounce solution that is 10 percent salt so that the resulting solution is 20 percent salt?
- a) 20 b) 30 c) 40
d) 50 e) 60
- 22 Laura has 20 coins consisting of quarters and dimes. If she has a total of \$3.05, how many dimes does she have?
a) 3 b) 7 c) 10
d) 13 e) 16
- 23 The seventh number in a sequence of numbers is 31 and each number after the first number in the sequence is 4 less than the number immediately preceding it. What is the fourth number in the sequence?
a) 15 b) 19 c) 35
d) 43 e) 51
- 24 what is the sixth term of the sequence 90, -30, 10, $-\frac{10}{3}$, ...?
a) $\frac{1}{3}$ b) 0 c) $-\frac{10}{27}$
d) -3 e) $-\frac{100}{3}$