PRACTICE EXAMPLES

1. As a decimal number 6.28% is equal to

(A) 0.0628 (B) 0.628 (C) 6.28 (D) 62.8 (E) 628

2. The value of $1 + \dfrac{1}{3 + \dfrac{1}{2}}$ is

(A) $\frac{6}{5}$ (B) $\frac{7}{6}$ (C) $\frac{9}{2}$ (D) $\frac{6}{7}$ (E) $\frac{9}{7}$

3. The tens digit of the product $1 \times 2 \times 3 \times \cdots \times 98 \times 99$ is

(A) 0 (B) 1 (C) 2 (D) 4 (E) 9

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1. The value of $\dfrac{2015 \times 2 + 4 \times 4030}{4030}$ is

(A) 2 (B) 3 (C) 4 (D) 5 (E) 6

2. The largest number below is

(A) 2^3 (B) $\dfrac{15}{2}$ (C) $\sqrt{81}$ (D) 4^2 (E) $\dfrac{31}{4}$

3. The sum of three different positive integers is 7. Their product is

(A) 12 (B) 10 (C) 9 (D) 8 (E) 5

4. If 4350 is written as a product of its prime factors, then the largest prime factor is

(A) 5 (B) 13 (C) 19 (D) 29 (E) 31

5. If $2x + 2y = 14$ and $x^2 - y^2 = 21$ then $x - y$ is equal to

(A) 1 (B) 2 (C) 3 (D) 4 (E) -1

6. If $x = \sqrt[3]{900}$ then

(A) $7 < x < 8$ (B) $9 < x < 10$ (C) $11 < x < 12$ (D) $10 < x < 11$
(E) $12 < x < 13$

7. If 8 athletes run a race and no two athletes finish exactly together, the number of different possible results for the first, second and third positions is

(A) 360 (B) 300 (C) 56 (D) 336 (E) 512

8. The values of x satisfying the equation $(x-7)(x+12) = -48$ are

(A) 7 or 12 (B) -7 or 12 (C) 4 or -9 (D) -4 or 9 (E) -12 or 7

9. Each interior angle of a regular 180 sided polygon is equal to

(A) 175° (B) 180° (C) 157.5° (D) 120° (E) 178°

10. The list of numbers

$$16;\ 19;\ 24;\ 25;\ 30;\ 31;\ 32;\ 46;\ x$$

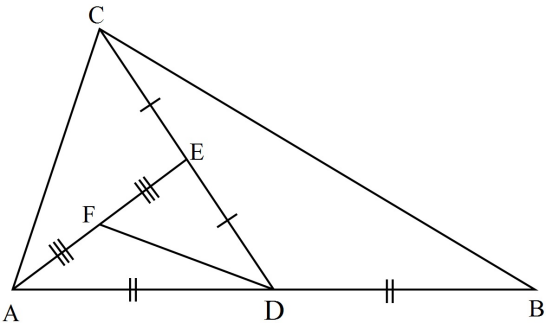
has the same median and mean. If x is greater than 46, then the value of x is

(A) 47 (B) 48 (C) 53 (D) 50 (E) 57

11. Lewis Hamilton completes a 72-lap race travelling at an average speed of 288 km/h. Each lap is 6 km in length. The time taken, in hours, for him to complete the race is

(A) 1 (B) 2 (C) 2.5 (D) 3 (E) 1.5

12. If D, E and F are the midpoints of AB, CD and AE respectively, and the area of triangle ABC is 24, then the area of triangle DEF is equal to



(A) 3 (B) 4 (C) 6 (D) 8 (E) 9

13. The last digit of $2^{2015} + 5^{2015}$ is

(A) 1 (B) 3 (C) 5 (D) 7 (E) 9

14. The sum of the squares of 3 consecutive positive integers is 770. The largest of these integers is

(A) 15 (B) 16 (C) 17 (D) 18 (E) 19

15. A die has 20 identical equilateral triangular faces numbered from 1 to 20. If two such dice are rolled the most probable sum of the numbers showing on the top faces is

(A) 18 (B) 19 (C) 20 (D) 21 (E) 2

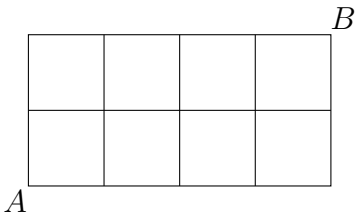
16. On a line segment with the points R, A, T and E, the ratio $RA : AT = 1 : 3$ and $AT : TE = 5 : 2$. The ratio $RA : TE$ is

(A) 1 : 2 (B) 1 : 3 (C) 3 : 5 (D) 5 : 6 (E) 3 : 2

17. The number of squares that have $(-1; -1)$ as a vertex and at least one of the coordinate axes as an axis of symmetry is

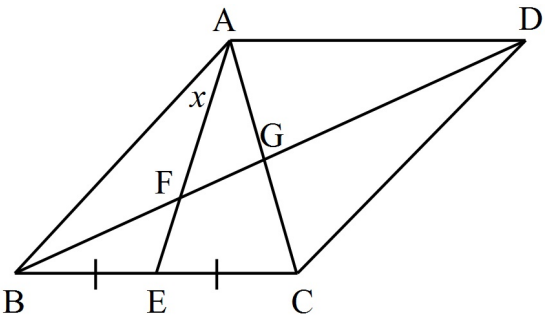
(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

18. In how many different ways can you get from point A to point B if you can only move up or to the right along the lines?



(A) 6 (B) 9 (C) 12 (D) 15 (E) 18

19. $ABCD$ is a rhombus. E is the midpoint of BC. If $\widehat{BAE} = x$, then $FECG$ is a kite if x is equal to



(A) 40° (B) 35° (C) 30° (D) 20° (E) 25°

20. Anelize put 120 identical cubes together to form a rectangular prism. She then painted all 6 faces of the prism. Once the paint had dried she disassembled the cubes and found that 24 of the cubes had not been painted on any face. The surface area of the prism she formed was

(A) 148 (B) 150 (C) 152 (D) 154 (E) 156