

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 $1 + \frac{1}{3 + \frac{1}{2}}$ 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 $1 \times 2 \times 3 \times \cdots \times 98 \times 99$ is

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

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TOLD TO DO SO**

1. $\frac{3 \times 2016 + 13 \times 2016}{1008} =$

- (A) 2 (B) 16 (C) 32 (D) 19×2016 (E) $6 + 13 \times 2016$

2. Which term must be removed from the sequence $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{1}{10}$ and $\frac{1}{12}$ so that the sum of the remaining terms is equal to 1?

- (A) $\frac{1}{2}$ (B) $\frac{1}{4}$ (C) $\frac{1}{6}$ (D) $\frac{1}{10}$ (E) $\frac{1}{12}$

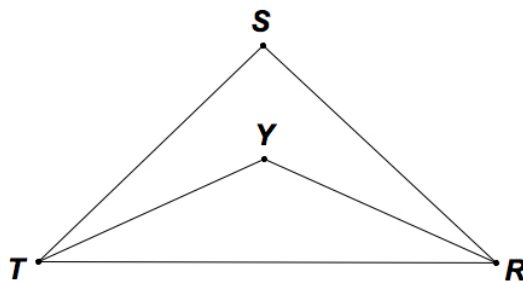
3. One of the numbers below is multiplied by 2016 and the product is a perfect square. The number is

- (A) 10 (B) 14 (C) 32 (D) 100 (E) 108

4. $\sqrt{5050^2 - 4950^2} =$

- (A) 10 (B) 10^2 (C) 10^3 (D) 10^4 (E) 10^5

5. In the diagram $\triangle STR$ and $\triangle YTR$ are isosceles triangles with $ST = SR$ and $YT = YR$. If $\widehat{YTR} = 36^\circ$ and $\widehat{SRY} = 24^\circ$, then \widehat{TSR} is equal to



- (A) 50° (B) 60° (C) 70° (D) 40° (E) 30°

6. The square of the difference between the largest and smallest of three consecutive integers is

- (A) 1 (B) 9 (C) 4 (D) 100 (E) 2

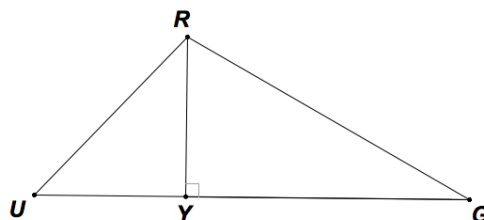
12. Mrs. Habana turns 45 years old in 2016 and her son 17. In which year will Mrs. Habana turn double her son's age?

(A) 2033 (B) 2044 (C) 2031 (D) 2040 (E) 2027

13. A certain pen can draw a line 0.4 mm wide and 1 km long before it runs out of ink. The largest square you can colour in with this pen has an area, in square metres, of

(A) 4 000 (B) 400 (C) 40 (D) 4 (E) 0.4

14. In $\triangle RUG$, $RU = 10$ cm, $UG = 21$ cm, $RG = 17$ cm and RY is perpendicular to UG at point Y . The length of RY , in cm, is



(A) 8 (B) 5 (C) 7 (D) 6 (E) 8.1

15. A sequence of 2016 terms is constructed as follows: The first two terms of the sequence are both equal to 3. Starting from the third term, each subsequent term is the sum of the preceding two terms. Each of the terms of this sequence $3, 3, 6, 9, \dots$ is now divided by 2 and the remainders are added. What is the sum of all the remainders of the 2016 terms?

(A) 504 (B) 1 008 (C) 1 344 (D) 1 512 (E) 2 016

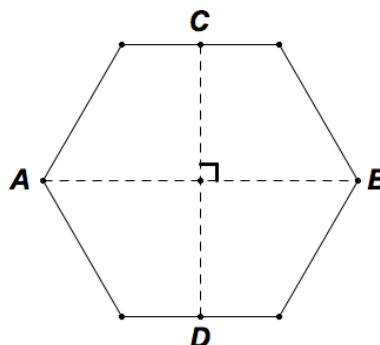
16. A box contains 5 red pens, 6 blue pens and 4 green pens. Three pens are consecutively taken from the box, at random and without replacement. The probability that the first pen is red, the second pen blue and the third pen green, is

(A) $\frac{7}{225}$ (B) $\frac{1}{5}$ (C) $\frac{9}{82}$ (D) $\frac{4}{91}$ (E) $\frac{3}{14}$

17. If $169! = 1 \times 2 \times 3 \times \cdots \times 169$ is written as the product of prime numbers, how many times would 13 appear as a factor?

(A) 12 (B) 13 (C) 14 (D) 15 (E) 16

18. A and B are opposite vertices of a regular hexagon. C and D are midpoints of two opposite sides. If the area of the hexagon is 126, then $AB \times CD$ is

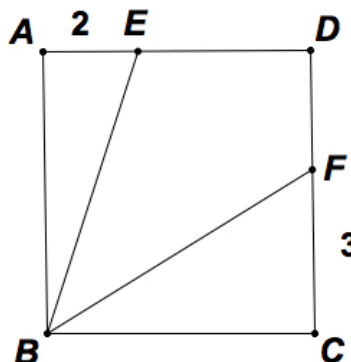


(A) 129 (B) 132 (C) $84\sqrt{3}$ (D) 168 (E) 248

19. How many grams of pure gold must be added to five grams of a mixture that consists of 10% gold and 90% of some other metal so that the mixture will contain 20% gold?

(A) 0.125 (B) 0.25 (C) 0.375 (D) 0.5 (E) 0.625

20. If $ABCD$ is a square, $\widehat{EBF} = \widehat{CBF}$, $AE = 2$ and $CF = 3$, then the length of EB is



(A) $\sqrt{13}$ (B) 5 (C) 6 (D) $\sqrt{29}$ (E) $4\sqrt{3}$