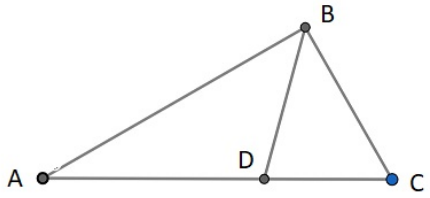
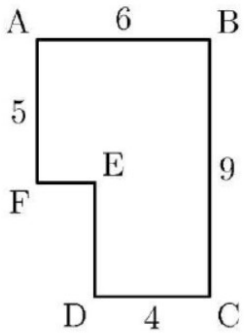
M. Prakash Institute **22 Jan 2023**
Entrance Test **10am-12noon**
3 Year foundation program **Paper type: AB**

---

1. Sum of seven consecutive odd natural numbers is 651. Find the largest number.
2. What is the smallest natural number with which if we multiply 2023, we get perfect square.
3. Number of whole natural numbers between $\sqrt[3]{7}$ and $\sqrt[3]{344}$ is
4. In triangle ABC, BD bisects angle B. If $m\angle C = \frac{2}{3}m\angle B$ and $m\angle B = 3m\angle A$ then $m\angle BDC$ is

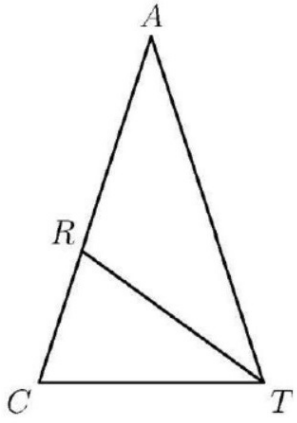


5. All angles of the polygon $ABCDEF$ are right angles. Find the area of the polygon $ABCDEF$.

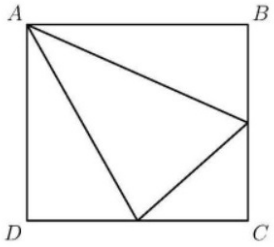


6. If $a = -2$, the value of largest number in the set $\left\{-4a, 4a, \frac{24}{a}, a^2, 1\right\}$ is
7. F is fraction halfway between $\frac{1}{5}$ and $\frac{1}{3}$ (on the number line). Find $105F$.
8. A square and a triangle have equal perimeters. The lengths of the three sides of the triangle are $6.2, 8.3$, and 9.5. The area of the square is
9. Simplify and find $\dfrac{95}{2 - \dfrac{5}{12}} =$
10. The number 64 has the property that it is divisible by its units digit. How many whole numbers between 10 and 50 have this property?

11. In triangle CAT, we have $\angle ACT = \angle ATC$ and $\angle CAT = 36°$. $\overline{TR}$ bisects $\angle ATC$, If $CT = 29$ then find AR



12. The area of rectangle $ABCD$ is 72 . If point A and the midpoints of $\overline{BC}$ and $\overline{CD}$ are joined to form a triangle, the area of that triangle is



13. For any positive integer n, define $\boxed{\text{n}}$ (n inside a square box) to be the sum of all positive factors of n. For example, $\boxed{6} = 1 + 2 + 3 + 6 = 12$. $K = \boxed{11}$ Find $\boxed{\text{K}}$.

14. The base of an isosceles $\triangle ABC$ is 24 and its area is 60 . What is the perimeter of $\triangle ABC$?

15. $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{1}{4}$ of $\frac{1}{5}$ of $\frac{1}{6}$ of 26640 is

16. If $25^{3-2x} = 5^{-6}$, find x.

17. 50 ml of concentrated Kokam syrup is mixed with water for making a glass of 250 ml tasty Kokam Sharabat. How many liters of water is required to make 70 glasses of Kokam Sharabat.

18. $\dfrac{\sqrt{200} + \sqrt{300}}{\sqrt{8} + \sqrt{12}} =$

19. If $\dfrac{3}{7}\left(1 - \dfrac{7}{94}k\right) + \dfrac{1}{5}\left(1 + \dfrac{7}{94}k\right) + \dfrac{2}{3}\left(1 - \dfrac{7}{94}k\right) = 0$, then find the value of $\dfrac{7k}{2}$.

20. R is a rational number. Instead of multiplying R by 3 and then subtracting 7, Rahul divided it by 3 and then added 7. Surprisingly he got the same answer. Report $4R$

Answer Key:

1	2	3	4	5	6	7	8	9	10
99	7	6	75	46	8	28	36	60	17
11	12	13	14	15	16	17	18	19	20
29	27	28	50	37	3	14	5	68	21