

M. Prakash Institute

STD VIII - Entrance Test 3

19 April 2026

Time: 3 hours

Note: Q1 to Q10 are of 2 marks each, Q11 to Q30 are of 4 marks each.

Total Marks: 100

Paper Type:AD

Student Receipt number:

Student Name:

Q1 If $m \oplus n = (m+1) + (m+2) + (m+3) + \dots + (m+n) + (m+n+1)$, find **a** when $\mathbf{a} \oplus 8 = 810$.

Q2 Find the least number which when divided by 3, 4, and 5 leaves remainders 2, 3, and 4 respectively.

Q3 Find the sum of the digits at the unit's place of 18^{81} and 81^{18}

Q4 Find the sum of all perfect square integers between $\sqrt{16}$ and $\sqrt{841}$

Q5 x varies directly with the square of y . When x is 2, y is also 2. Find positive value of y when x is 8.

Q6 By which smallest positive integer should 1080 be multiplied to get a perfect cube.

Q7 The sum of 2025 and a number **A** is divisible by 7 and 11. Find the least value of **A**

Q8 If 70% of 60% of $x = 58$; then what is $x\%$ of 42 ?

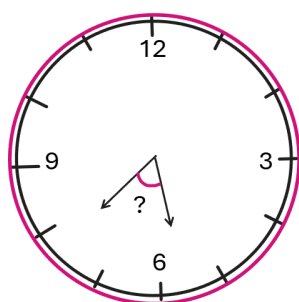
Q9 Maya and Jaya together plucked 120 flowers. $\frac{1}{3}$ rd of the number of flowers Jaya plucked is 18 more than $\frac{1}{8}$ th of the number of flowers Maya plucked. How many flowers did Jaya pluck?

Q10 Find sum of all the prime factors of 2310.

Q11 If

$$\frac{7x-1}{4} - \frac{1}{3} \left(2x - \frac{1-x}{2} \right) = \frac{19}{3}, \quad \text{Find } 10x$$

Q12



Two different analog clocks show time 5:40 and 7:50. The clock in the figure shows the positions of only hour hands of both these clocks. Find the angle between these hour hands.

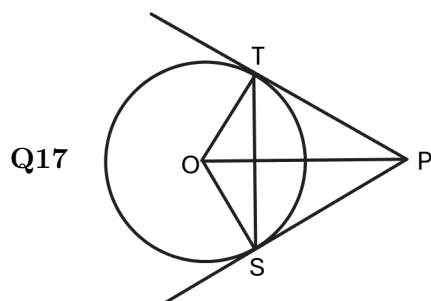
Q13 In a rural school, 128 students were initially enrolled. The school experiences a 25% dropout rate every year. How many students will remain in the school after a period of three years?

Q14 International Space Station (ISS) had enough provisions for 20 people to survive 30 days when a team of 4 astronauts, including Shubhanshu Shukla, joined 6 existing crew members on the ISS. After staying for 21 days, the team of 4 departed. For how many days will the remaining provisions last for the 6 crew members?

Q15

$$\frac{1}{5 + \frac{2}{6 + \frac{4}{1 - \frac{1}{2}}}} = \frac{p}{q}, \text{ where } p \text{ and } q \text{ have no common factors, Find } (q - p)$$

- Q16** The average age of 15 students in a class is 12 years. When three new students with ages 10, 13, and x years join the class, the average age of the students in the class becomes 12.5 years. Find the value of x .

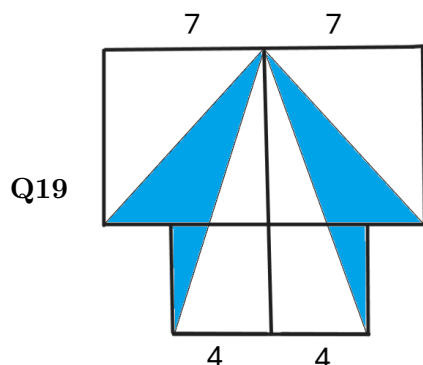


Given is the circle with centre O .

Points T and S lie on the circle.

Rays PT and PS are perpendicular to segments OT and OS respectively. If length OP is two times the radius of the circle, find measure of $\angle OTS$.

- Q18** It took a goods train 50 seconds to pass a tunnel that was 1200 m long. It took the same train, 75 seconds to pass a bridge that was 2 km long. At what speed (in metres per second) was the train travelling?



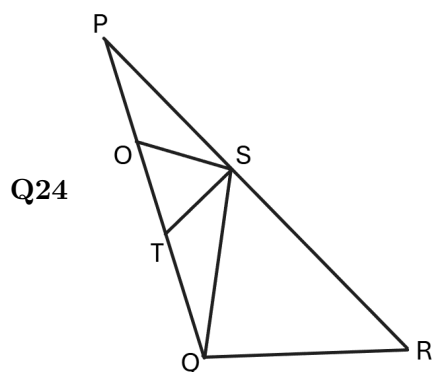
Find the area of shaded portion, if two squares of 7cm side and two squares of 4cm side are arranged as shown.

- Q20** Three friends A , B and C enjoy collecting stamps. The ratio of the stamps with A & B is $3 : 4$ and that with A & C is $2 : 3$. If C has 153 stamps, how many more stamps does B have than A ?
- Q21** An NGO has donated some money to an upcoming play-school. The money is sufficient to buy either 35 school bags or 140 water bottles. How many sets comprising of one school bag and one waterbottle together can be bought in that amount?
- Q22** K is the average of two numbers A and B .
Find the sum of digits of $500K$, if

$$A = \sqrt{7.29}$$

$$B = \sqrt{\frac{81\% \text{ of } k}{36\% \text{ of } k}}$$

- Q23** A property of 247 acres is divided among three sisters Gauri, Snehal and Sheetal in the ratio $1/2 : 1/3 : 1/4$. How many acres of land does Sheetal receive?



In the figure, $\overline{PO} \cong \overline{TO} \cong \overline{SO}$, $\overline{TS} \cong \overline{TQ}$, $\overline{QS} \cong \overline{QR}$. Find $m\angle PRQ$ if $m\angle QST = 36^\circ$.

Q25

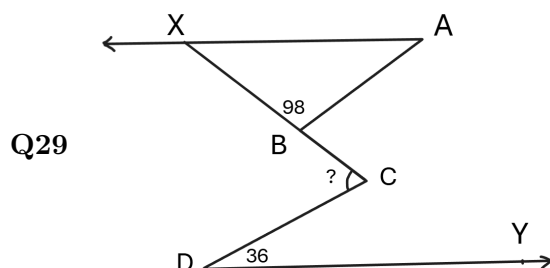
Solve for x : $\frac{2^{x+3}}{2^{1-x}} \times 2^x = (128)^5$

Q26 A person buys a mobile phone for Rs.10,000 and sells it at a 15% profit. He then buys a tablet with the total money earned and sells it at a 20% profit. Calculate the overall profit percentage.

Q27 If $a = 73$, $b = 27$, find the value of

$$\left[\frac{a^2 - 2ab + b^2}{a + b} \times \frac{a^2 + 2ab + b^2}{a - b} \right] \div (a + b)$$

Q28 The complement of a certain angle is 4 times the angle. Find K , if the measure of its supplementary angle is $(90 + K)^\circ$



Given:
 $\overrightarrow{AX}$ parallel to $\overrightarrow{DY}$, $\overline{BX} \cong \overline{BA}$
 $m\angle XBA = 98^\circ$, $m\angle CDY = 36^\circ$,
 points $X - B - C$ are collinear.
 Find: $m\angle BCD$

Q30 In a 200 metre race, Arun beats Varun by 35 metres or 7 seconds. Find the time taken by Arun to complete the race.