

Answer Key – Class 6 Mathematics First Term Onam Exam 2025

Q1. Triangle inside a circle

- a) The shaded part is a sector of the circle with central angle 40° . Fraction of circle shaded = $40/360 = 1/9$ of the circle.
- b) In a triangle inscribed in a semicircle, the angle opposite the diameter is 90° . Here, since one angle is 40° , the other two angles together = 140° . So the angles are $40^\circ, 70^\circ, 70^\circ$.
- c) infinite number triangles can be drawn inside the circle.
- d) Correct option: C.

Q2. Water tank

- a) Volume = $l \times b \times h = 90 \times 70 \times 50 = 315000 \text{ cm}^3 = 315 \text{ litres}$.
- b) If the tank holds 189 litres, water volume = 189000 cm^3 . Height of water = $189000 / (90 \times 70) = 30 \text{ cm}$.
- c) If all dimensions are doubled, volume increases $2 \times 2 \times 2 = 8$ times. Correct option: D.

Q3A. Fractions

- a) divide numerator and denominator by 3
- b) $16 \div 6 = 8 \div 3$. So answer is 3 people.
- c) $42 \div 24 = 1.75 \text{ m cloth per student}$.
- d) $24/36 = 2/3$. GCF = 12. Both statement and reason are correct. Correct option: B.

Q3B. Alternative Fractions

- a) two forms with the same denominator are 155 and 153.
- b)
- To get 21 from 2, you'd multiply by 10.5 ($2 \times 10.5 = 21$).
 - To get 27 from 3, you'd multiply by 9 ($3 \times 9 = 27$).

Since the multipliers are different (10.5 vs. 9), 21/27 is not an equivalent form of 2/3.

c) the correct matches are:

- $p = z$
- $q = x$
- $r = y$

This corresponds to option **B**.

Q4A. Patterns and Fractions

a)

- **Next line:** The first fraction is $\frac{15}{16}$. The next denominator is $16 \times 2 = 32$. The new fraction is $\frac{1}{32}$.
$$\frac{15}{16} + \frac{1}{32} = \frac{30}{32} + \frac{1}{32} = \frac{31}{32}$$
- **Second next line:** The first fraction is $\frac{31}{32}$. The next denominator is $32 \times 2 = 64$. The new fraction is $\frac{1}{64}$.
$$\frac{31}{32} + \frac{1}{64} = \frac{62}{64} + \frac{1}{64} = \frac{63}{64}$$

So, the next two lines are:

$$\frac{15}{16} + \frac{1}{32} = \frac{31}{32}$$
$$\frac{31}{32} + \frac{1}{64} = \frac{63}{64}$$

b) The quantity of milk in the small vessel in the beginning was **641 litres**.

c) m) $2/5 + 3/5 = 1$, n) $3/7 + 4/7 = 1$, p) $3/8 + 4/8 = 7/8$. Correct match: A.

Q4B. Milk Vessel

a) Hari takes $5/6 = 0.833$ litres.

b) Sudha takes $5/3 \approx 1.67$ litres.

c)

$$\text{Total} = \frac{5}{6} + \frac{5 \times 2}{3 \times 2} = \frac{5}{6} + \frac{10}{6} = \frac{15}{6}$$

Simplify the fraction: $\frac{15}{6} = \frac{5}{2} = 2.5$ litres.

d) Correct option: C.

Q5. Shapes

a) Students draw and shade pattern.

b) The figure is not a rectangle because opposite sides are not equal. Correct option: C.

Q6. Volume and Area

a) Area of rectangle = $l \times b = 96$. Volume = $l \times b \times h = 96$. Hence, height = 1 cm.

b) Volume = length \times breadth \times depth. 250000 litres = 250000000 cm^3 . Half volume = 125000000 cm^3 . Width = 10 m = 1000 cm, depth = 2 m = 200 cm. Length = $125000000 / (200 \times 1000) = 625 \text{ cm} = 6.25 \text{ m}$.

c) Correct calculation: A. $(2500 \times 1000 \times 40) / 1000$.