CLASS 9 MATH PRACTICE PAPER 14
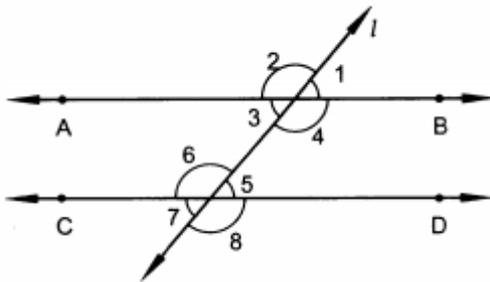
Class 09 - Mathematics

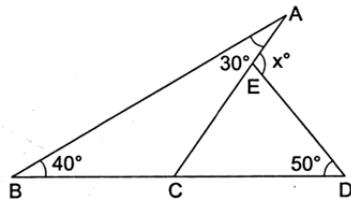**Time Allowed: 1 hour and 30 minutes**   **Maximum Marks: 40**

Section A

1. If $2^{5x} \div 2^x = \sqrt[5]{2^{20}}$, find x.   **[2]**

2. Simplify: $\sqrt{3 + 2\sqrt{2}}$ **[2]**

3. Factorise: $x^2 - 2x + \frac{7}{16}$.   **[2]**

4. In Fig, given that AB ∥ CD. If $\angle 2 = 2(\angle 1)$, determine $\angle 7$.   **[2]**

5. Calculate the value of x in each of the given figure: **[2]**
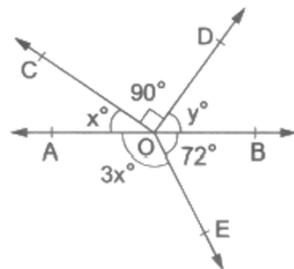

Section B

6. Express $0.4\overline{7}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$ **[3]**
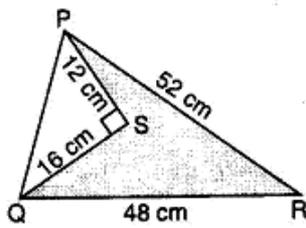
OR

Simplify the following by rationalizing the denominator: $\frac{4+\sqrt{5}}{4-\sqrt{5}} + \frac{4-\sqrt{5}}{4+\sqrt{5}}$

7. Factorise: $3x^3 - x^2 - 3x + 1$ **[3]**

8. Factorize: $4(x - y)^2 - 12(x - y)(x + y) + 9(x + y)^2$ **[3]**

9. Calculate $\angle AOC$, $\angle BOD$ and $\angle AOE$ in the adjoining figure, it is being given that $\angle COD = 90°$, $\angle BOE = 72°$ and AOB is a straight line.   **[3]**
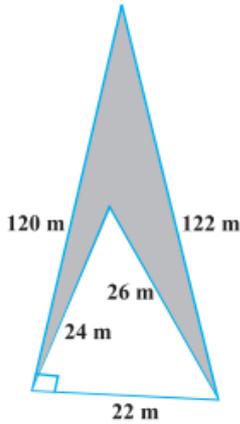

10. In a $\triangle ABC$, $\angle C = 3\angle B = 2(\angle A + \angle B)$ Find the three angles.   **[3]**

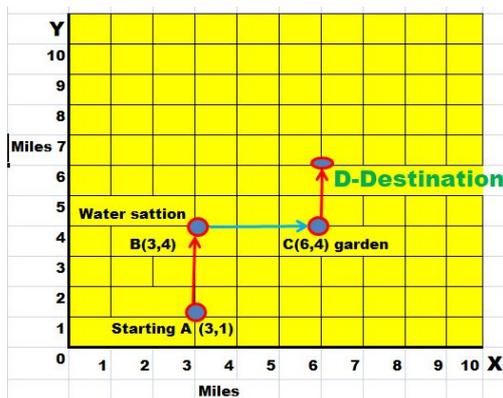11. Find the area of the shaded region in figure.   **[3]**

OR

Calculate the area of the shaded region in Fig.

Section C

12. **Read the following text carefully and answer the questions that follow:** [4]

Arun is participating in an **8 miles** walk. The organizers used a square coordinate grid to plot the course. The starting point is at A (3, 1). At B (3, 4), there's a water station to make sure the walkers stay hydrated.

From water station, the walkway turns right and at C (6,4) a garden is situated to keep walkers fresh. From the garden, the walkway turns left and finally, Arun reaches at destination D to complete 8 miles.

  i. How far is the water station B from garden C? (1)

 ii. What is the abscissa of destination point D? (1)

iii. What is the ordinate of destination point D? (2)

   OR

   What are the coordinates of destination point D? (2)

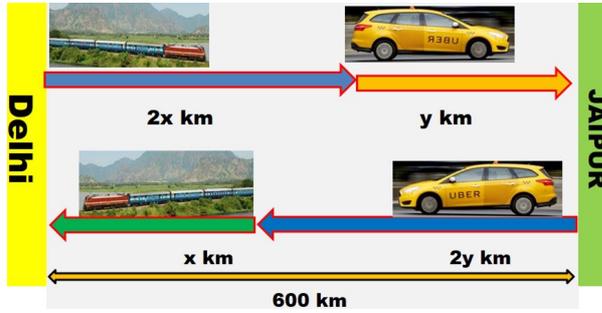13. **Read the following text carefully and answer the questions that follow:** [4]

Ajay lives in Delhi, The city of Ajay's father in laws residence is at Jaipur is 600 km from Delhi. Ajay used to travel this 600 km partly by train and partly by car.

He used to buy cheap items from Delhi and sale at Jaipur and also buying cheap items from Jaipur and sale at Delhi.

Once From **Delhi to Jaipur** in forward journey he covered 2x km by train and the rest y km by taxi.

But, while returning he did not get a reservation from Jaipur in the train. So first 2y km he had to travel by taxi

and the rest x km by Train. From Delhi to Jaipur he took 8 hrs but in returning it took 10 hrs.

i. Write the above information in terms of equation. (1)

ii. Find the value of x and y? (1)

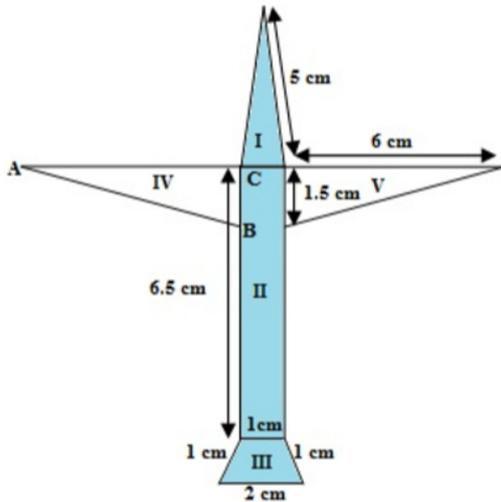iii. Find the speed of Taxi? (2)

    OR

    Find the speed of Train? (2)

14. **Read the following text carefully and answer the questions that follow:** **[4]**

Renu made a picture of an aeroplane with coloured paper as shown in the figure.

i. What is the area of portion I? (1)

ii. What is the area of portion II? (1)

iii. What is the area of portion III? (2)

    OR

    What is the area of portion IV? (2)