SSLC EXAMINATION - MARCH 2025 - MATHEMATICS

2 MARK

1. a) 140°
   b) 70°

2. a) $d = \underline{5}$
   b) $x_n = 5n - 2$
   $x_{11} = 5 \times 11 - 2 = \underline{53}$

3. a) $\frac{8}{20}$
   b) $\frac{4}{20}$

4. diameter $= \frac{4}{\sin 50}$
   $= \frac{4}{0.77} = \frac{400}{77}$
   $= \underline{5.19}$

3 MARK

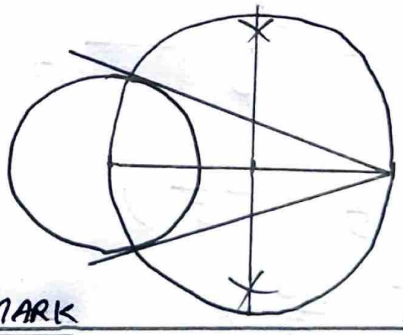
5. a) $x^2 - 6x = 187$
   b) $x^2 - 6x + 3^2 = 187 + 3^2$
   $(x-3)^2 = 196$
   $(x-2)^2 = (\pm 14)^2$
   $x - 2 = 14$
   $x = 14 + 2 = \underline{16}$
   OR $x = -14 + 2 = \underline{-12}$

6. a) Slope $= \frac{7-5}{3-2} = \frac{2}{1} = \underline{2}$
   b) $y - 5 = 2(x - 2)$
   $y - 5 = 2x - 4$
   $2x - y - 4 + 5 = 0$
   $2x - y + 1 = 0$

7. a) 2
   b) $6\overline{)176}\ 29$
   12
   56
   54
   $\underline{2}$, Yes, 176 is a term

8. a) PB = 5 cm
   b) $PA \times PB = PC \times PD$
   $8 \times 5 = 10 \times PD$
   $\frac{40}{10} = PD$
   $PD = 4$

9. a) 3 units
   b) $(x-4)^2 + (y-3)^2 = 25$
   $(x-4)^2 + 3^2 = 25$
   $(x-4)^2 = 16$
   $x - 4 = \pm 4$
   $x = \pm 4 + 4$
   $x = 8, 0$
   Coordinates (8,0) (0,0)

10. 

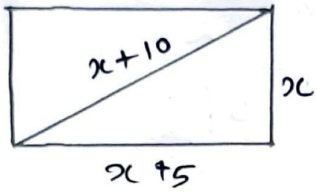
4 MARK

11. a) $\frac{20 \times 21}{2} = \underline{210}$
    b) $\frac{20}{2}(5 + 100) = \underline{1050}$
    c) $\frac{20}{2}(8 + 103) = \underline{1110}$
    d) $\frac{20}{2}(4 + 99) = \underline{1030}$

12

a) $l = x+5$

$d = x+10$



b) $x^2 + (x+5)^2 = (x+10)^2$

$x^2 + x^2 + 10x + 25 = x^2 + 20x + 100$

$x^2 + 10x + 25 = 20x + 100$

$x^2 - 10x - 75 = 0$

$x = \frac{+10 \pm \sqrt{100 - 4 \times 1 \times -75}}{2 \times 1}$

$= \frac{10 \pm \sqrt{400}}{2}$

$= \frac{10 \pm 20}{2} = 15$

$b = 15$

$l = 20$

$d = 25$

13

a) $\left(\frac{3+8}{2}, \frac{2+7}{2}\right)$

$= \left(\frac{11}{2}, \frac{9}{2}\right)$

b) 2 : 3

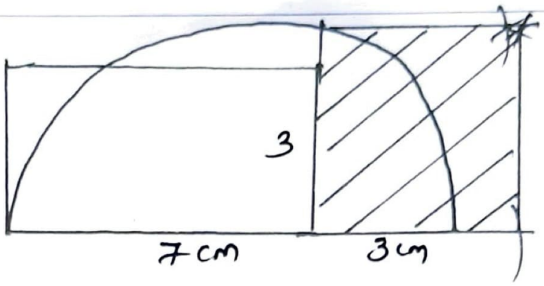
A(3,2) P B(8,7)

$P\left(\frac{16+9}{5}, \frac{14+6}{5}\right)$

$= \left(\frac{25}{5}, \frac{20}{5}\right)$

$= (5,4)$

14

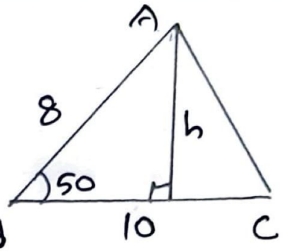


15

a) $\sin 50 = \frac{h}{8}$

$h = 8 \times .77$

$= 6.16$ cm

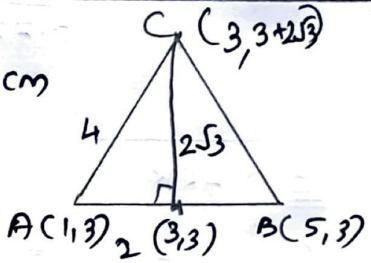


b) Area $= \frac{1}{2} \times 6.16 \times 10$

$= 30.8$ cm^2

16.

a) AB = 4 cm



b) (3, 3)

c) $(3, 3+2\sqrt{3})$

17

a) 3 : 2

b) $3^3 : 2^3 = 27 : 8$

c) $\frac{27}{8} = \frac{108}{V_2}$

$V_2 = \frac{108 \times 8}{27} = 32$

18.

a) 24

b) $\frac{1}{3}\left(\frac{8}{24}\right)$

c) $\frac{12}{20}$ or $\frac{3}{5}$

19. a) 65°

b) 130°

c) 50°

d) 65°

20 $P(x) = x^2 - 7x + 12$

a) $P(3) = 3^2 - 7\times 3 + 12$

$= 9 - 21 + 12$

$= \underline{0}$

b) $P(x) - P(3) = x^2 - 7x + 12$

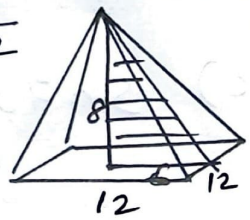
$= (x-3)(x-4)$

c) Solution $x = 3$ and $x = 4$

21 a) $l = \sqrt{8^2 + 6^2}$

$= \sqrt{100}$

$= \underline{10\ m}$



b) L.S.A $= 2\pi rl$

$= 2\times 12\times 10$

$= \underline{240\ m^2}$

Cost $= 240 \times 340$

$= \underline{81600/-\ Rs/-}$

5 MARK

22 $x_6 = 27 \quad x_{16} = 67$

a) $d = \frac{67-27}{16-6} = \frac{40}{10} = \underline{4}$

b) $x_1 = 27 - 5\times 4 = \underline{7}$

c) $x_n = 4n + 3$

d) $S_{31} = 67 \times 31 = \underline{2077}$

23. a) 30 : 60 : 90

$2 : 2\sqrt{3} : 4$

$A(2, 2\sqrt{3})$

b) $r = 4$

c) $(x-0)^2 + (y-0)^2 = 4^2$

$x^2 + y^2 = \underline{16}$

d) $(-2, -2\sqrt{3})$

24 a) V of cone $= \frac{1}{3}\pi r^2 h$

$= \frac{1}{3} \times \pi \times 12^2 \times 18^6$

$= \underline{864\pi\ cm^3}$

b) V of a sphere $= \frac{4}{3}\pi \times 3^{3\,2}$

$= 4 \times 9 \times \pi$

$= \underline{36\pi\ cm^3}$

c) no: of sphere

$= \frac{864\pi}{36\pi}$

$= \underline{24}$

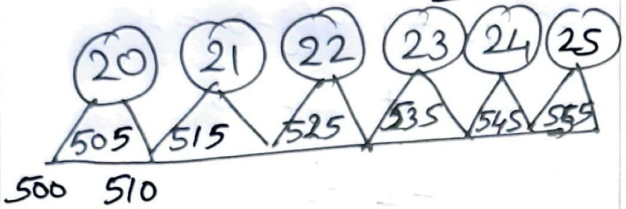
25

Daily wage	C.f
400	11
500	19
600	29
700	42
800	49

25 a) $\frac{49+1}{2} = \frac{50}{2} = \underline{25}$

b) $d = \frac{600-500}{29-19} = \frac{100}{10}$

$= \underline{10}$



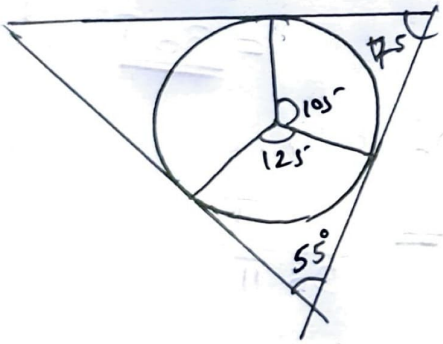
$X_{20} = 505$

c) Median wage = $\underline{555}$

26

55° → 125

75° → 105



27 a) $PA \times PB = PC \times PD$

$12 \times 3 = PC \times 8$

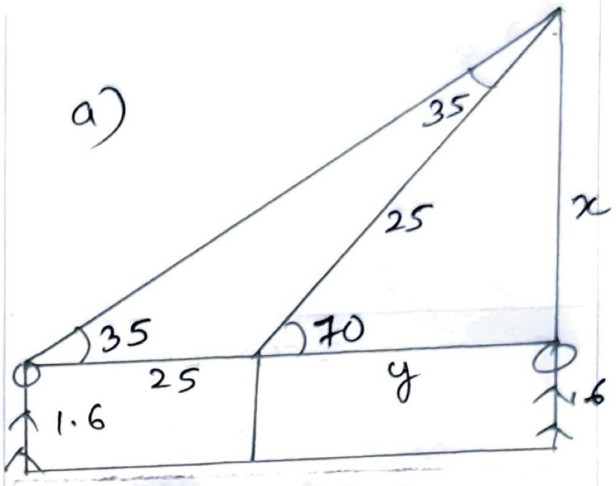
$PC = \frac{36}{8} = 4.5$

b) $8 + 4.5 = \underline{12.5 = CD}$

$CD = \underline{12.5}$

c) $6 + 6 = \underline{12}$

28 a)



b) $\cos 70 = \frac{y}{25}$

$y = 25 \times .34$

$= 8.5$

Distance = $\underline{8.5}$

c) $\sin 70 = \frac{x}{25}$

$.94 \times 25 = x$

$x = 23.5$

height = $23.5 + 1.6$

$= \underline{25.1 \text{ m}}$

29 a) 1

b) $\frac{2}{\sqrt{3}}$

c) 1

d) $2 - 2 = \underline{0}$

SHAMEEM FARHATH.MA
CHSS Adakkakundu