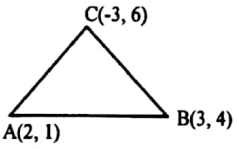
SSLC Pre - Model Evaluation - 2020

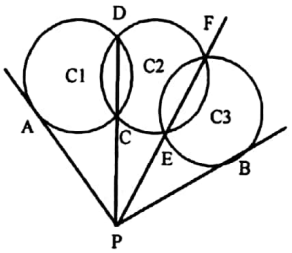
KP
Std. 10

Mathematics
(Answer Key)

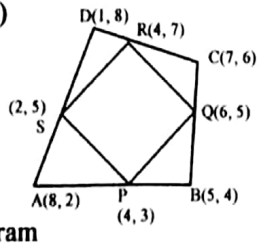
1. a. $d = 3$
   b. Since 50 is not a multiple of 3, 50 cannot be the difference between any two terms.
2. Length of the side = 13cm
3. a. radius = 6
   b. Centre = (0, 0)
4. A (4,0), B (0, 4), C (-4, 0), D (0, -4)
5. $\angle BOC = 80°$
   $\angle BAC = 40°$
   $\angle ABO = 20°$
6. Area = $\frac{1}{2} \times 7 \times 8 \times \sin 40 = 17.92\ cm^2$
7. a. 1/8 b. 4/8
8. a. 15cm b. 120
9. Construction
10. $x^2 - 8x - 9 = (x-9)(x+1)$
    Solutions are 9 and -1
11. a. Slope = -3/2
    b. (2, 0)
12. a. $x_{14} + x_{16} = 60$
    b. $x_1 + x_{29} = 60$
    c. $S_{29} = 29 \times 30 = 870$
13. Construction
14. a. $\frac{3 \times 6}{21 \times 13} = \frac{18}{273}$
    b. $\frac{8 \times 7 + 3 \times 6}{21 \times 13} = \frac{74}{273}$
15. $\frac{n(n+1)}{2} = 465$
    $n = 30$
16. $AD = \frac{6 \tan 80 \tan 40}{\tan 80 - \tan 40}$
    $= \frac{6 \times 5.67 \times 0.84}{5.67 - 0.84} = 5.92cm$
    $AB = \frac{AD}{\tan 40} = \frac{5.92}{0.84} = 7cm$
17. $AB = \sqrt{10}$, $BC = \sqrt{40}$,
    $AC = \sqrt{50}$
    $AB^2 + BC^2 = AC^2$
    $\therefore$ ABC is a right triangle



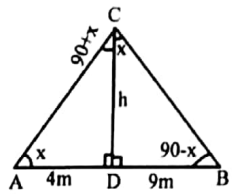
18. $PC \times PD = PA^2$
    $PC \times PD = PE \times PF$
    $PE \times PF = PB^2$
    From (1), (2) and (3)
    $PA^2 = PB^2$
    $\therefore PA = PB$



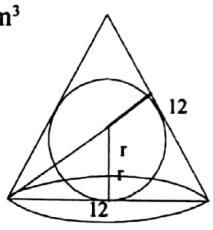
19. a. (4, 3), (6, 5), (4, 7), (2, 5)
    b. $PQ = \sqrt{8}$, $QR = \sqrt{8}$,
    $RS = \sqrt{8}$, $PS = \sqrt{8}$



    $\therefore$ PQRS is a parallelogram
20. a. l = 12cm
    b. $TSA = 340cm^2$
21. P = 6, q = 11
22. a. $50^2 = 2500$ b. $50 \times 51 = 2550$
    c. $2500 + 2550 = 5050$ d. $3 \times 5050 = 15150$
    e. $15150 + 100 \times 2 = 15350$
23. Construction
24. In ΔADC, $\tan x = h/4$
    $\therefore h = 4 \tan x$
    In $\Delta BDC = \tan x = 9/h$
    $\therefore h = 9/\tan x$



    $\Rightarrow \tan x = h/4 \Rightarrow \tan x = 9/h$
    $\therefore \frac{h}{4} = \frac{9}{h}$ $\therefore h^2 = 36$
    $h = 6m$
25. radius = 2cm
26. a. Income tax of 46th employee
    b. 4000 - 5000
    c. median = 4750 Rs.
27. radius of the sphere = $6\sqrt{3} = 2\sqrt{3}cm$
    $\therefore$ volume = $32\sqrt{3}\pi cm^3$



28. $x + 2y - 6 = 0$
    $x + 2y + 6 = 0$
    a. Points on the line (1) are (0, 3) at (6, 0)
    points on the line (2) are (0, -3) at (-6, 0)
    b. Slope of the line (1) = -1/2
    Slope of the line (2) = -1/2
    So these lines are parallel
29. a. 11, 12, 13, 14, 15
    16, 17, 18, 19, 20, 21
    b. 1, 2, 3, 4 .....
    c. 1, 3, 6, 10, ...
    d. $1 + 2 + 3 + \ldots\ldots + 9 = 45$
    e. 46 and 55
    f. $10/2\ (46 + 55) = 505$