Second term evaluation 22-'23

Mathematics

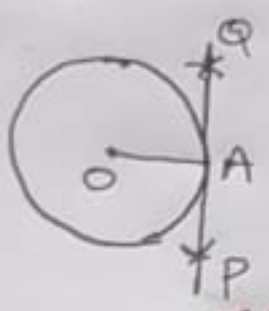
Answer Key

Any 3 from 1 to 4

1. a) 60°
   b) $3\sqrt{3}$
2. $(x+1)^2 = 49$
   $x+1 = 7$
   $\therefore x = 6$
3. a) $(7, 0)$
   b) $(0, 5)$
4. a) 120
   b) 60 $(3 \times 2 = 6)$

Any 4 from 5 to 10

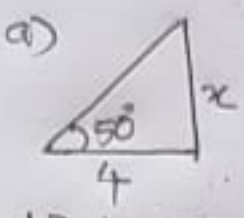
5. a) 5 cm
   b) $\sin A = 4/5$
   $\cos A = 3/5$
6. a) 55°
   b) 70°
7. a) 10 cm
   b) 12 cm
8. a) 2
   b) $(-2, 0)$
9. a) 16
   b) $x^2 + 8x + 16 = 36$
   $(x+4)^2 = 6^2$
   $\therefore x + 4 = 6$
   $\therefore x = \underline{2}$
10. a) 90°
    b)



$(4 \times 3 = 12)$

Any 8 from 11 to 21

11. $a = 12$ cm
    $h = 8$ cm
    a) 12 cm
    b) $l = 10$ cm
    c) $2al$
    $= 2 \times 12 \times 10$
    $= 240\ cm^2$
12. a) B(5, 3)
    D(2, 7)
    b) AC = 5
13. a)

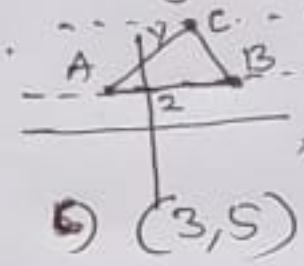


    b) $\tan 50 = \frac{x}{4}$
    $\therefore x = 4 \tan 50$
    $= 4.76$ m
14.

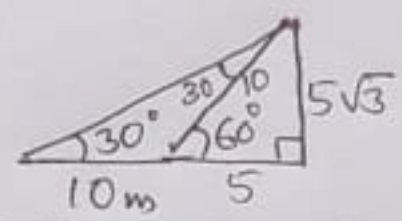
15. a) 13 cm
    b) $13 - x$
    c) $x(13-x) = 40$
    $-x^2 + 13x = 40$
    $x^2 - 13x + 40 = 0$
    $(x-8)(x-5) = 0$
    $x = 8, 5$
    $l = 8,\ b = 5$
16. a) $PB = 36/12 = 3$ cm
    b) $12 - 3 = 9$ cm
17. a) 5
    b) $\sqrt{(x-3)^2 + 0^2} = 5$
    $(x-3)^2 = 5^2$
    $(x-8)(x+2) = 0$
    $\therefore x = 8, -2$
    $\therefore (8, 0), (-2, 0)$
18. a) 40°
    b) 90°
    c) $AB = 6 \times \sin 40$
    $= 3.84$ cm
19. a) 50°
    b)

$(8 \times 4 = 32)$

20. a) (6, 0)
    b) $3\sqrt{3}$
    c) $(3, 3\sqrt{3})$
21. a) 50°
    b) 8 cm
    c) $\frac{1}{2} \times 8 \times 8 \times .98 = 31.36$
22. a) 4
    b) 10
    c) 28
    d) $14 \times 2 = 28\ cm^2$
23. a) 15°
    b) 8 cm
    c) 30°
    d) $QS = 4\sqrt{3}$, $QR = 4$
24. a) 50°
    b) $180 - 100 = 80^\circ$
    c) $\angle C = 60^\circ$
    $\therefore \angle A = 40^\circ$
25. a) 80 cm
    b) $5\sqrt{3}$ cm
    c) $5\sqrt{2}$ cm
    d) $\frac{1}{3}a^2h = \frac{500\sqrt{2}}{3}\ cm^3$
26.



    b) (3, 5) or any (x, 5)
27. a)



    b) 5m, c) $5\sqrt{3}$ m
28.

29. a) 3 cm
    b) 2 cm
    c) 18 cm
    d) 9 cm
    e) $30/2 = 15$ cm

$(6 \times 5 = 30)$