ഉത്തര സൂചിക

1. പൊതുവ്യത്യാസം = 7 − 2 = 5

2. $AB \times BC = BD^2$
   $3 \times 2 = BD^2$
   $BD^2 = 6$
   $BD = \sqrt{6} cm$

3. 45° : 45° : 90°
   1 : 1 : √2,
   3 : 3 : 3√2,
   DE : EF : DF   EF = 3

4. (0, 2)

5. സൂചകസംഖ്യ (3,4) ആധാരബിന്ദു (0,0)

   അകലം = $\sqrt{(3^2 + 4^2)}$ = $\sqrt{(9 + 16)}$ = $\sqrt{25}$ = 5 യൂണിറ്റ്

6. $x_n = 4n − 1$
   a) $x_1 = 4 \times 1 − 1$
        = 4 − 1
        = 3 ആദ്യപദം = 3

   b) $x_2 = 4 \times 2 − 1$
        = 8 − 1
        = 7
   പൊതുവ്യത്യാസം = 7 − 3 = 4

7. ∠ADC = 40 °
   a) ∠AOC = 2 X ∠ADC
        = 2 X 40
        = 80°
   b) ∠ABC = 180 − (∠AOC / 2)
        = 180 − 80/2 = 180 − 40 = 140°

8. കറുത്ത പന്തുകൾ = 6

   വെളുത്ത പന്തുകൾ = 9

   ആകെയുള്ള പന്തുകൾ = 15

   a) കറുത്ത പന്തുകൾ ആകാനുള്ള സാധ്യത = 6/15 = 2/5

   b) വെളുത്ത പന്തുകൾ ആകാനുള്ള സാധ്യത = 9/15 = 3/5
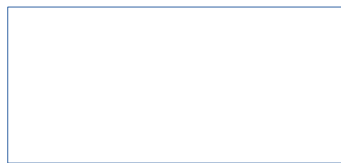
9        $(x + 2)(x − 2)$

10.
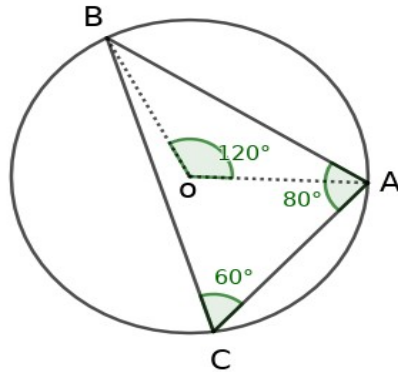   B (6, 5)   C(6, 5)
   D (2, 8)

                        A(2, 5)

11   a   32- 28= 4

b) 32+28= 60

12a) $a =(\dfrac{a}{2})^2 = 16$

a= 8 ,

b) $b= (\dfrac{b}{2})^2 = (\dfrac{10}{2})^2 = 25$

13

14 a) PB = 4+5 = 9

b) $PA \times PB = PC \times PD$

$4 \times 9 = 3 \times PD$

PD=12 , CD = 12-3 = 9

15 a)   AC= $\sqrt{5^2 + 12^2} = \sqrt{169} =13$

b) sin A= $\dfrac{5}{13}$, cos A = $\dfrac{12}{13}$

16   a) AR = 3cm ,

perimeter = 24 cm
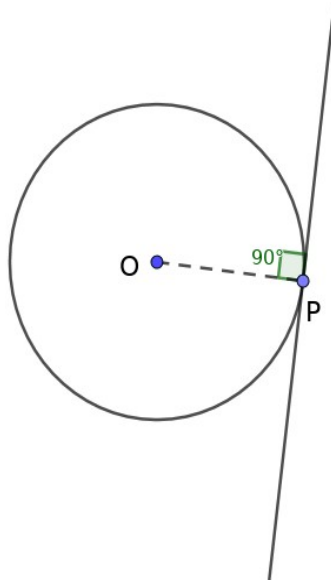
17   a) l= 10 cm

$\dfrac{x}{360} = \dfrac{r}{R}$ $\longrightarrow$ $\dfrac{72}{360} = \dfrac{r}{10}$ $\longrightarrow$ r= 2cm

18 a) B = (4,0)

   b) perimeter = 2(4+3)

19 a)

20 a) $\Pi r^2 = \Pi 2^2 = 4\Pi$

   b) $\dfrac{4\Pi}{16} = \dfrac{\Pi}{4}$

21 a) $\dfrac{20 \times 21}{2} = 210$

   b) 3(210) = 630
c=630+ (4×20) = 630+ 80 = 710

22 a) 25

   b) 100

c) no , it is not a square number

23 a) 20^0

   b) 50^0

c) 100^0

d) 80^0

24 a) PD= 11-3= 8 cm

   b) $(x + 1)(x - 1) = x^2 - 1$

   c) $3 \times 8 = 24$

   d) $x^2 - 1 = 24 \longrightarrow x^2 = 25 \longrightarrow$ x =5
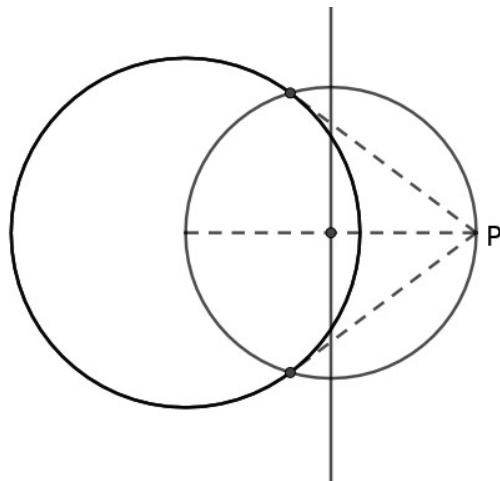
PA = 6cm , PB = 4cm

25) a)12

b) (1,1) ,(1,3) , (3,1) ,(3,3) = $\dfrac{4}{12}$

c) $\dfrac{3}{12}$

26 a) $p(3) = 3^2 - 7 \times 3 + 15 = 3$
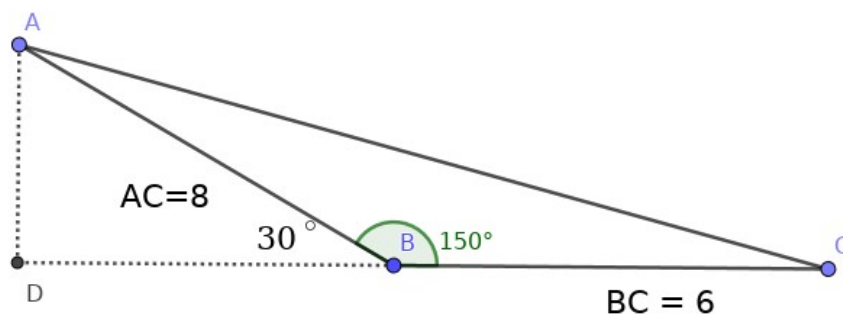
b) $p(x) - p(3) = x^2 - 7 \times 3 + 15 - 3 = \ = x^2 - 7 \times x + 12$

c) $= x^2 - 7 \times x + 12 = (x-4)(x-3)$

27

28)

AD =4cm, Area = $\frac{1}{2}(4 \times 6) = 12 sq.cm$

29 a) $\frac{189}{7} = 27$

b) 24,25,26,27,28,28,31 $\implies \frac{26 + 27}{2} = 26.5$

30 a) P= (3.5,2)

Q = (6.5, 5)
R= (6,6)
S= (3,3)

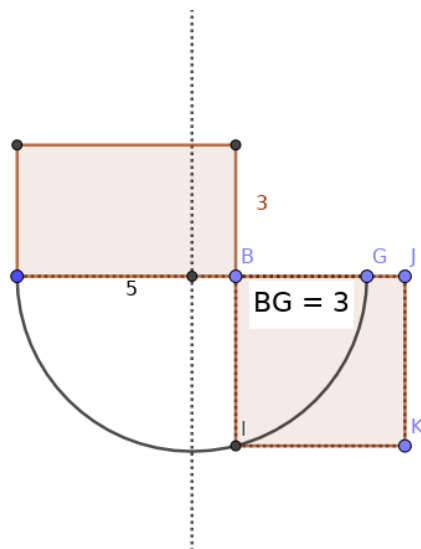b) midpoint joining quadrilateral is always a parallelogram

31 a) 4n+1

b) 57 divided by 4 gives reminder as 1. so it is a term
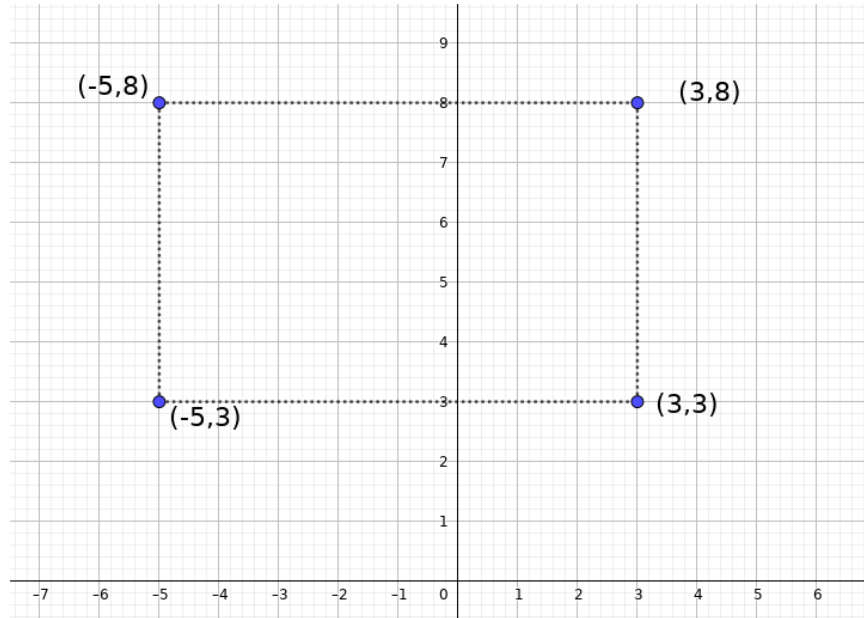
c) 81

d) $\frac{20}{2}(5 + 81) = 860$

32

33 a) PQ = $8\sqrt{3}$, b) PR = 16cm

c) 120^0 d) RS= 16cm, QS = 16+8 = 24 cm

34 a)

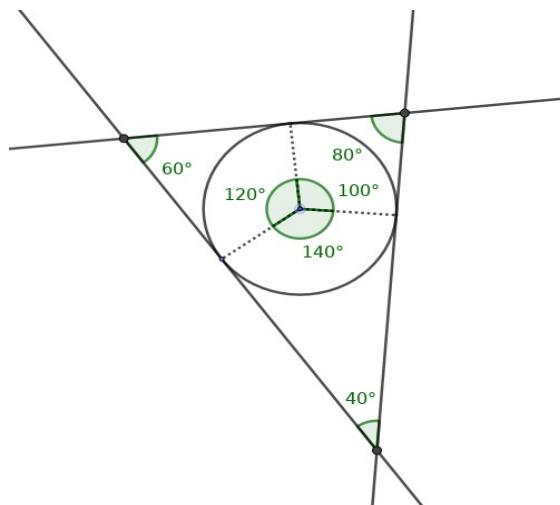b) rectangle

c) perimeter = 2(8+5) = 26 unit.

35

36) a) 70^0

b) 80^0

c) 70^0

d) $\angle B = 40^0, \quad \angle A = 80^0$

37)   a) $\dfrac{630}{23} = 30$

   b) 60

c) 60

38 a) 8cm

   b) $\sqrt{8^2 + 15^2} = \sqrt{289} = 17$cm

c) $\Pi \times 8 \times 17 = 136\Pi$ sq. Cm

39 a) 400

   b) 500

c) $\dfrac{400 + 500}{2} = 450$

 40 a)

   b) 80 m

c) 40+80 = 120 m

41 a) $x + 4$

   b) $x(x + 4) = 357$

c) $x^2 + 4x = 357$

   $x^2 + 4x + 4 = 357 + 4$

$x^2 + 4x + 4 = 361$

$(x + 4)^2 = 361$

$x = 17, x + 4 = 21$

42   a) $\dfrac{7 - 4}{8 - 5} = 1$

      b) $\dfrac{4 - 3}{5 - 2} = \dfrac{1}{3}$, not a point on this line

c)(11,10) (14, 13)

43 a) 3r , 5h

   b) $\dfrac{1}{3}\Pi(2r)^2 \times 4h : \dfrac{1}{3}\Pi(3r)^2 \times 5h \quad \longrightarrow \quad 16 : 45$

   c) 16 : 45 $\longrightarrow$ 160 : 450

    450 litre

44 a) 180^0

   b) 40^0

   c) 50^0

   d) 110^0

45   a) 23,26,29,33

       b) 10

c) nth term = 3n+2

46 th term = $3 \times 46 + 2 = 138 + 2 = 140$

55 th term = $3 \times 55 + 2 = 165 + 2 = 167$

sum = $\dfrac{10}{2}(140 + 167) = 1535$