2. *Coordinates and graphics*

1.	(i) k $\left(\frac{3-7}{2},\frac{4+2}{2}\right)=(-2,3)$ p $\left(\frac{3+1}{2},\frac{4-2}{2}\right)=(2,1)$ (ii) $G_1=\frac{3-2}{-2-2}=\frac{-1}{2}$ $G_2=2$ Mid $p+kp=\left(\frac{-2+2}{2},\frac{3+1}{2}\right)=(0,2)$ $\therefore equation \quad y=2x+c$ $when \quad x=0, y=2, then \quad c=2$ $hence, \quad y=2x+2$	B_1 for both p and k ✓ B_1 for both G_1 and G_2 ✓ r identified $\frac{B_1}{3}$

2. *Let the exterior ∠ be x*
6.5x + x = 180
7.5x = 180⁰
x = 24

No. of sides = 360/24
= 15 sides.

3. *(2n – 4) 90 = 3*
(2(n+2) -4)90 4
2n – 4 = 3
2n 4
8n – 16 = 6n
2n = 16
n = 8
(2(8) – 4) 90
= 12 x 90 = 1080

4. *15 b = 60*
2 2
15b = 60 x 4
b = 16cm (diagonal)
⇒ = $\sqrt{8^2 + 7.5^2}$
∴per = 4 $\sqrt{8^2 + 7.5^2}$

$= 43.86cm$

5. $x^2 = 7.25^2 - 5.25^2$

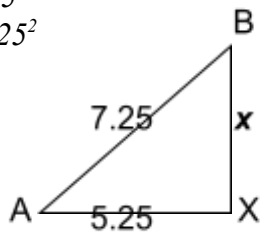
$x = \sqrt{7.25^2 - 5.25^2}$

$= 52.5625$

$\underline{27.5625}$ -

$\sqrt{25}$

$= 5cm$



$BC = 15.25 + 5 = 22.25cm$

$Arc\ CD = {}^{90}/_{360} \times 3.142 \times 2 \times 22.25$

$= 34.65475$

$Perimeter = AB + BC + CD + DE + EA$

$= 15.25 + 7.25 + 22.25 + 34.95 + 5.25$

$= 84.95cm$

6. $AB^2 = 10^2 - 8^2 = 100 - 64$

$AB^2 = 36$

$AB = 6cm$

$Cos\ (90^o - x^{o)}\ {}^{8}/_{10} = {}^{4}/_{5}$

Attempt to get x by using +e = 180°

$e = \frac{(2n-4)90}{n}$

number of sides

7. $x - 20 + 3x = 180^oC$

$4x = 200$

$x = 50^o$

8. $2x + 40 + x - 25$

$3x + 15 + 9 = 180$

$3x + 15 = 29$

$9 = ½\ (3x + 15)$

$3x + \underline{3x} = 180 - 15 - \underline{15}$

$2 \qquad 2$

$x = 35^o$

$x = 35 = 10^o$

$½\ (10 + 110) = 60^o$

9. $\underline{1260} = 14rt\ \angle s$

90

$Sum\ of\ interior\ \angle s$

$(2n - 4)\ rt\ \angle s$

$2n - 4 = 14$

$n = 9$ 9 sided polygon

10. $N = 50 + 40 = 90^o$

$Alternative\ angles$

11. $5^{3(y+1)} + 5^{3y} = 630$

$Let\ x = 5^{3y}$

$5^3 \times 5^{3y} + 5^{3y} = 630$

$125x + x = 630$

$x = 5$

$5^{3y} = 5^1$

$3y = 1$
$y = {}^{1}/_{3}$

12. $\frac{360}{n} + 108 = 180 - \frac{360}{n}$
$360 + 108n = 180n - 360$
$-72n = -720$
$n = 10$

13. Let exterior angle be x
$\frac{4x}{4} = \frac{180^o}{4}$
$x = 45^o$
$n = \frac{360}{}$
Exterior angle
$n = \frac{360}{45}$
$= 8$sides

14. a) Let $< BDC = ø$
$A^2 = 5^2 + 8^2 - 2 \times 5 \times 8 \cos ø$
$\cos ø = \frac{89 - 16}{80} = \frac{73}{80} = 0.9125$
$Ø = 24°9 \quad {}^{1} = 24° 8$

b) Area of ABD
$= ½ \times 8 \times 10 \sin 24°9^{1}$
$= 40 \times 0.4091$
$= 16.36cm^3$ 16.37 16.38

15. (a) $\angle CDF = 100-60=40^o$ (exterior angle of a Δ)
(b) $\angle BDE = 20^o$ (DE is bisector of BDG)
$\therefore \angle ABD = 20^o$ (alternate angles)

16. $4x + x - 30 = 180$
$5x = 210°$
$x = 42$
$(x - 30)n = 360°$
$12n = 360°$
$n = \frac{360°}{12}$
$n = 30$

17. $180(n-20) = 1440$
$n - 2 = \frac{1440}{180} = 8$
$n = 10$
Decagon

18. $<PQR = <SRT = x$ (Alt $<SPQ$ //RS)
$\therefore 5x + 3x + x = 180°$ <'s of Δ

$9x = 180°$

$X = 20°$

$\therefore 5 \times 20 + y = 180$

$y = 180 - 120 = 60$

19. Let the interior $\angle$ be x and exterior be y

$\therefore x + y = 180$

$+$

$x - y = 132$

$2x = 312$

$x = 156$

$y = 180 - 156 = 24^o$

No. of sides (n) $= \frac{360^o}{24} = 15$

$= 15$ sides