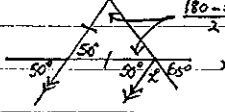
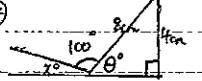




62) Computer: MP3 player: CDs = 2:3:5 (Total 10 parts)  
 10 parts = 600 ∴ 1 part = 600 ÷ 10 = 60  
 ∴ 3 parts = 3 × 60 = 180 songs ∴ (C)

63)   
 $\frac{180-50}{x} = 65^\circ$  each  
 $x = 180 - (50+65) = 65$  ∴ (B)

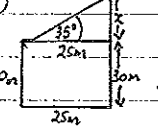
64)   
 $\sin \theta = \frac{40}{100} = \frac{2}{5} \Rightarrow \theta = 30^\circ$   
 $x = 180 - (100+30) = 50$  ∴ (C)

65) Surface Area =  $6s^2 = 6 \times 8^2 \text{ cm}^2 = 384 \text{ cm}^2$  ∴ (C)

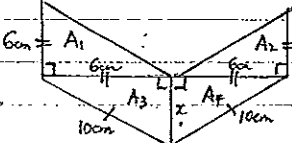
66) A(-2,-2), B(1,2)  
 $AB = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2} = \sqrt{(1-(-2))^2 + (2-(-2))^2} = \sqrt{25} = 5$   
 $m_{AB} = \frac{y_2-y_1}{x_2-x_1} = \frac{2-(-2)}{1-(-2)} = \frac{4}{3}$  ∴ (A)

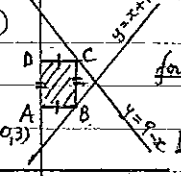
67) Perimeter =  $6 + \frac{1}{2} \times 2\pi r + \frac{1}{2} \times 2\pi r$   
 $= 6 + \pi r + \pi r = 34 \text{ m (nearest m)}$  ∴ (B)

68) Time of journey =  $2\frac{1}{4}$  hrs; Distance = 234 km  
 Average Speed =  $\frac{D}{T} = \frac{234}{2\frac{1}{4}} = 104 \text{ km/h}$  ∴ (C)

69)   
 $\tan 35^\circ = \frac{x}{25}$   
 $x = 25 \tan 35^\circ \approx 18 \text{ m (nearest m)}$   
 ∴ Height of Building Y =  $30 + 18 = 48 \text{ m}$  ∴ (C)

70) A negative integer subtracted from a positive integer always gives a positive integer (eg.  $3 - (-5) = 8$ ) ∴ (D)

71)   
 Uniform cross-section is shown.  
 $x^2 = 10^2 - 6^2 = 64$   
 $x = \sqrt{64} = 8 \text{ cm}$   
 Cross-sectional Area =  $A_1 + A_2 + A_3 + A_4$   
 $A_1 = A_2 = \frac{1}{2} \times 6 \times 6 = 18 \text{ cm}^2$  ∴  $A_1 + A_2 = 36 \text{ cm}^2$   
 $A_3 = A_4 = \frac{1}{2} \times 6 \times 8 = 24 \text{ cm}^2$  ∴  $A_3 + A_4 = 48 \text{ cm}^2$   
 ∴  $A = 36 + 48 = 84 \text{ cm}^2$   
 $V = AH = 84 \times 5 = 420 \text{ cm}^3$  ∴ (B)

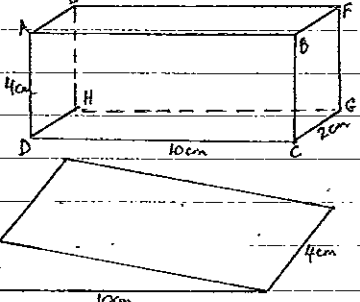
72)   
 ABCD is rectangle  
 for  $y=x+1$ , when  $y=3$ ,  $x=2$  ∴ B(2,3)  
 for  $y=x-2$ , when  $x=2$ ,  $y=0$  ∴ A(2,0)  
 for  $y=x-2$ , when  $x=4$ ,  $y=2$  ∴ C(4,2)  
 ∴ AB = 2 and BC = 4  
 ∴ Area of ABCD =  $2 \times 4 = 8 \text{ u}^2$  ∴ (B)

73) 

x	cf	f
1	8	8
2	10	2
3	14	4
4	17	3
5	19	2

 There are 19 scores  
 Median = 10<sup>th</sup> score = 2 ∴ (C)

74) In 12 minutes, Rebecca eats 2 pizzas & Angela eats 1 pizza. ∴ Together, they can eat 3 pizzas in 12 min. ∴ Together they can eat 1 pizza in  $(12 \div 3) \text{ min} = 4 \text{ minutes}$  ∴ (B)

75)   
 The block was cut through line BE ∴ (C)

76) (a) correct  
 (b) incorrect  
 (c) correct  
 (d) correct

77) (a) correct  
 (b) correct  
 (c) correct  
 (d) correct

78) (a) correct  
 (b) incorrect  
 (c) incorrect  
 (d) correct

79) (a) correct  
 (b) correct  
 (c) incorrect  
 (d) correct

80) (a) correct  
 (b) incorrect  
 (c) correct  
 (d) incorrect

SECTION 2 - PART B

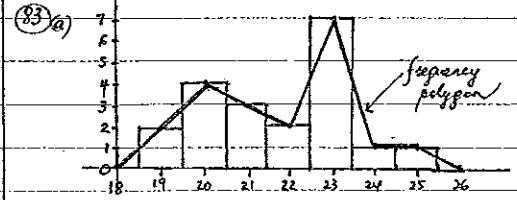
81) (a) Area to be tiled =  $9 \text{ m} \times 18 \text{ m} = 162 \text{ m}^2$   
 ∴ Cost per  $\text{m}^2 = \frac{\$4050}{162} = \$25$

(b) (i)  $300 \text{ mm} = (300 \div 1000) \text{ m} = 0.3 \text{ m}$   
 (ii) CD = 9m ∴ Number of tiles that will fit along CD =  $9 \div 0.3 = 30$

(iii) Total number of tiles to be bought =  $\frac{9 \times 18}{(0.3)^2} \times \frac{110}{100} = 1980$

82) (a)  $\angle ACB = 60^\circ$  (angle in an equilateral triangle)  
 ∴  $x = 120$  (adjacent supplementary angles - DCB is a straight line)

(b)  $OP = OQ$  (equal radii of circle)  
 ∴  $x = 25$  (base angles of isosceles triangle)  
 ∴  $y = 130$  (angle sum of  $\triangle POQ$  equals  $180^\circ$ )



(b) Range =  $25 - 19 = 6 \text{ cm}$

(c) In this particular case, the mode would be the most useful measure.

(d) No. of students in the class =  $2+4+3+2+7+1+1 = 20$   
 Total length of all students' hand spans =  $20 \times 21.75 = 435 \text{ cm}$   
 ∴ Teacher's hand span =  $462 - 435 = 27 \text{ cm}$

84) (a) No. of squares in 4<sup>th</sup> design =  $1^2 + 2^2 + 3^2 + 4^2 = 30$

(b) How  $1^2 + 2^2 + 3^2 + 4^2 + 5^2 + 6^2 = 91$   
 ∴ side length of the largest square of a design that has 91 squares of different size must be 6 cm

(c)  $\{1^2 + 2^2 + 3^2 + \dots + x^2 + (x+1)^2\} - \{1^2 + 2^2 + 3^2 + \dots + x^2\} = 400$   
 $\therefore (x+1)^2 = 400 \therefore x+1 = \sqrt{400} = 20$   
 $\therefore x = 19$

∴ Side length of the smaller of the two designs = 19

(d) 3cm cube made of unit cubes with sides of 1cm. No. of cubes of different size =  $1^3 + 2^3 + 3^3 = 36$

(e) If side length of cube is  $n \text{ cm}$ , then total number of cubes of all sizes =  $1^3 + 2^3 + 3^3 + \dots + n^3$