

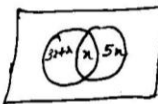
ANSWER KEY

one words

1. d)  $(A \cap B)' = A' \cup B'$
2. a) 8
3. d) 0, 10
4. b)  $8\sqrt{2}$
5. a) 0.687
6. d) factor
7. d) 0
8. a) -2
9. b) inside
10. c) 2:1
11. c) 4:7
12. a) (2a, 3b)
13. b) simple event
14. b) 46

- 2 marks
- 15)  $S = \{HH, TT, TH, HT\}$   
 $A = \{HH\}$   
 $P(A) = \frac{1}{4}$
  - 16) mode = 7000, mean = 6600
  - 17)  $S = \frac{a+b+c}{2}$   
 $= \frac{120}{2} = 60$
  - 18)  $\frac{x_1+x_2}{2} = 3, \frac{y_1+y_2}{2} = -4$   
 $x_1 = 1, y_1 = -2$
  - 19)  $x = 2$   
 $y = -1$
  - 20) i)  $(x+6)(x+4)$   
 ii)  $(x-5)(x-3)$
  - 21)  $\{\phi, \{x\}, \{y\}, \{z\}, \{x, y\}, \{y, z\}, \{z, x\}, \{x, y, z\}\}$
  - 22)  $= 16 \times 2$   
 $= 4^2 \times \sqrt{4}$   
 $= 4^{\frac{5}{2}}$
  - 23) Centroid =  $(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3})$   
 $= (2, -3)$
  - 24) median = 44
  - 25)  $1 - 0.82 = 0.18$
  - 26)  $A - B = \{-3, -2\}$   
 $A \cap B = \{4, 1\}$
  - 27)  $\frac{1}{4}, \frac{1}{4}, \frac{2}{4}$
  - 28)  $5.69457 \times 10^{12}$   
 $3.625 \times 10^9$
  - 29)  $x^2 + 4y^2 + 9z^2 + 4xy + 12yz + 6xz$

5 marks

- 30)  $A \cup B = \{4, 7, 8, 11, 12, 15\}$   
 $(A \cup B)' = \{10, 16\}$   
 $A' = \{4, 10, 15\}$   
 $B' = \{7, 10, 11, 16\}$   
 $A' \cap B' = \{10, 16\}$
- 31)   
 $32 + x + x = x + 5n$   
 $32 = 5n - 2x$   
 $x = 8$
- 32)  $\frac{1}{13} = 0.076923$   
 length = 6  
 number  
 $= 3\sqrt{7} - 5\sqrt{7} + 2\sqrt{7} = 0$
- 33) Visualise - 3.45 upto 2 decimal
- 36)  $(a + \frac{1}{a})^3 = a^3 + \frac{1}{a^3} + 3(a + \frac{1}{a})$   
 $216 = a^3 + \frac{1}{a^3} + 18$   
 $a^3 + \frac{1}{a^3} = 216 - 18 = 198$
- 38)  $\begin{vmatrix} 1 & 0 & -7 & 6 \\ 0 & 1 & 7 & -6 \\ 1 & 1 & -6 & 0 \end{vmatrix}$   
 $(x-1)(x-2)(x+3)$
- 38)  $AB = \sqrt{25} = 5$   
 $BC = \sqrt{25} = 5$   
 $AC = \sqrt{50} = 5\sqrt{2}$
- 39) P(0, 2) trisection  
 Q(2, 5)
- 40) D = (3, 0) midpt of BC  
 length of the median =  $\sqrt{18}$
- 41)  $3a = 180$   
 $a = \frac{180}{3} = 60$   
 $S = 90$   
 $S - a = S - b = S - c = 30$   
 Area =  $900\sqrt{3}$  or  $1558.8$
- 42) 

c/f	N = 25	median = $1 + (\frac{n-m}{b}) \times c$
2	l = 30	
9	f = 10	
24	m = 24	
34		
45	c = 10	
50		

 = 31
- 43)  $x + 4 = 24$   
 $x = 20$
- 44) a)  $\frac{x}{3} + \frac{x}{3} = 1$   
 $\frac{2x}{3} = 1$   
 $x = \frac{3}{2}$
- 44) b)  $S = 160$   $a = 100$   
 $b = 120$   
 Area  $c = 120$   
 $= \sqrt{40 \times 2 \times 60}$   
 $= \sqrt{4800}$   
 $= 9600 m^2$
- 35)  $(x+y)^2 = 55^2 = 225$