NCSE 2014 (P1)

1. A	11. B	21. C	31. B
2. A	12. C	22. D	32. C
3. D	13. D	23. B	33. C
4. A	14. D	24. B	34. D
5. B	15. B	25. A	35. B
6. A	16. C	26. D	36. A
7. A	17. A	27. C	37. B
8. D	18. A	28. C	38. A
9. B	19. D	29. B	39. A
10. A	20. D	30. A	40. D

NCSE 2014 (P2)

1. a) $2\frac{3}{4} \div \frac{5}{8}$

$= \frac{11}{\cancel{4}_1} \times \frac{\cancel{8}^2}{5} = \frac{22}{5}$

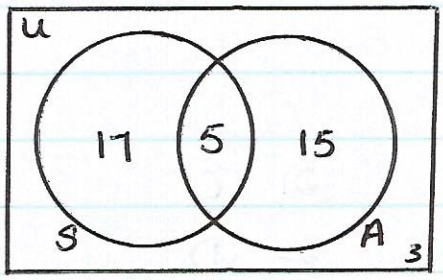
$= 4\frac{2}{5}$

b) $2\frac{7}{8} = 2.875$

$\simeq 2.9$ (correct to 1 dp)

c) $14.995 \simeq 15.000$ (correct to 2 sf)

2. a)



b) $17 + 15 = 32$ students do 1 subject.

c) Let A be the event a student does both subje

$$P(A) = \frac{\text{Possible outcomes}}{\text{Total outcomes}}$$

$$= \frac{5}{40}$$

$$= \frac{1}{8}$$

3. a) (i) $8a - 4b + 5b$

$= 8a + b$

(ii) $2x(3x + 5) - 6x^2$

$= 6x^2 + 10x - 6x^2$

$= 10x$

b) (i) $2a + 4b$

$= 2(a + 2b)$

(ii) $5ab^2 - 15a^2b^3$

$= 5ab(b - 3ab^2)$

4. a.) $V_A = \pi r^2 h$

$= \frac{22}{7} \times 2 \times 2 \times 14^2$

$= 176\ cm^3$

b.) $176 cm^3 = \frac{176}{1000} L$

$= 0.176$ litres

c.) $V_B = \pi r^2 h$

$= \frac{22}{7} \times 4 \times 4 \times 14^2$

$= 704\ cm^3$

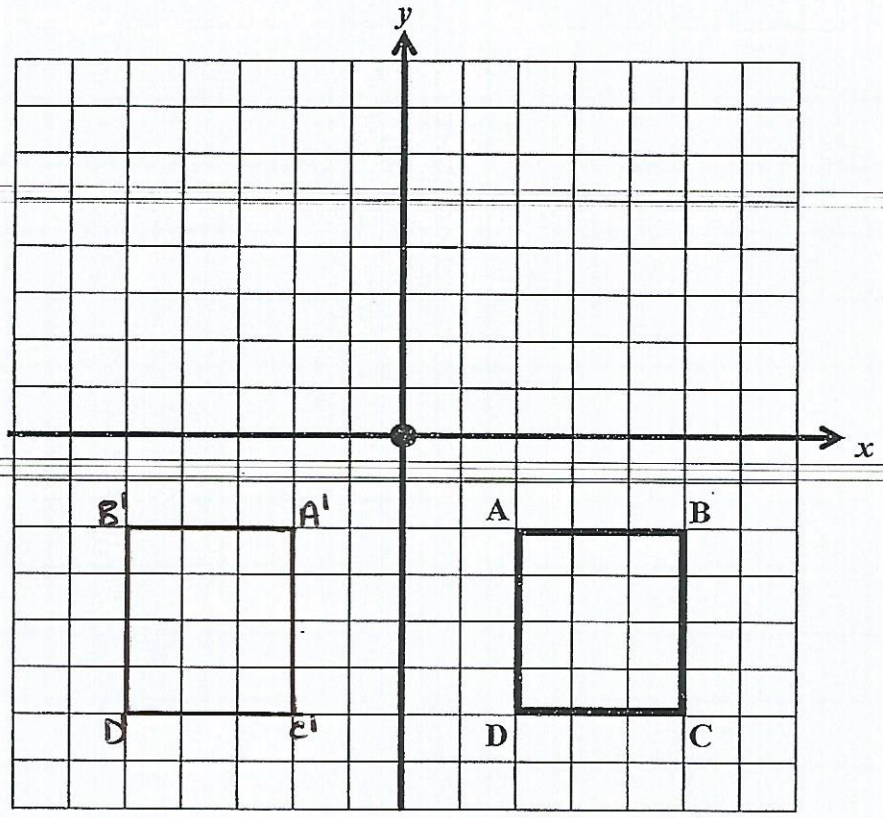
Ratio $= 176 : 704$

$= 1 : 4$

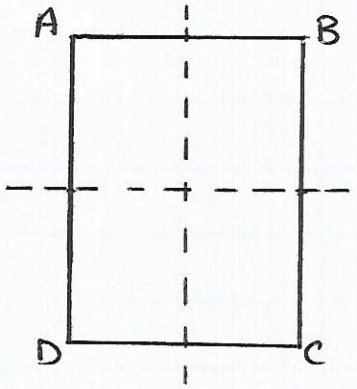
5. The quadrilateral **ABCD** is shown in the diagram.

(a) **ABCD** is reflected in the y - axis to produce its image **A′B′C′D′**.

Draw and label the image **A′B′C′D′** on the diagram below. [4 marks]



(b) Draw the lines of symmetry for **ABCD** on the diagram above. [2 marks]



There are two lines of symmetry

6. a.) 3 texts were sent.

b.)

Number of Texts	Tally	Frequency
1	𝍸	5
2	𝍸 |	6
3	𝍸 ||||	9
4	||||	4
5	𝍸 |	6

c.) Total $= (1\times5) + (2\times6) + (3\times9) + (4\times4) + (6\times5)$

$= 5 + 12 + 27 + 16 + 30$

$= 80$ texts.

d.) $\bar{x} = \dfrac{\Sigma(f\times x)}{\Sigma f}$

$= \dfrac{80}{30}$

$\bar{x} = 2.666\ldots$

$\bar{x} \simeq 3$ texts a day.

7. a) (i) US $1.00 = TT $6.50

US $120 = TT $(6.50 × 120)

= TT $780

(ii) If 10% = US $120

then 100% = US $(120 × 10)

= US $1200

= TT $ (6.50 × 1200)

= TT $7800

b) (i) $I = \frac{P \times R \times T}{100}$

$= \frac{7200 \times 8 \times 7}{100}$

= $4032

(ii) Amount = P + I

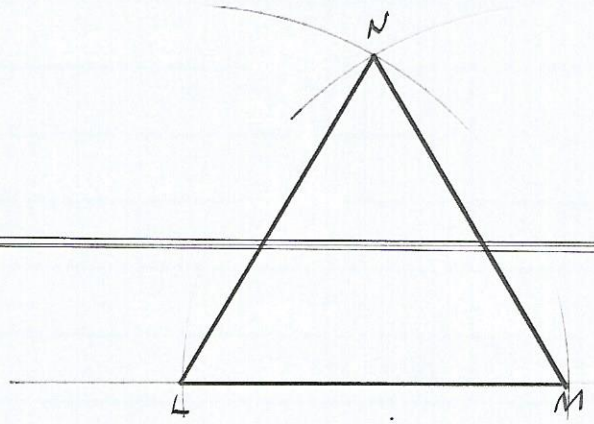
= 7200 + 4032

= $11232.

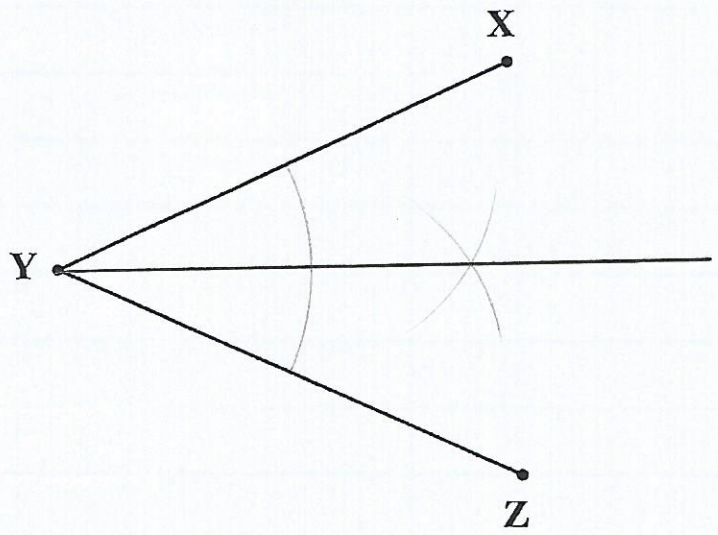
7. (c) For this question, you are required to show all construction lines.

Using a pair of compasses, ruler and pencil only,

(i) Construct the triangle **LMN**, with lengths **LM = MN = LN = 5cm.** [3 marks]



(ii) Bisect the angle **XYZ**. [3 marks]



8. a) (i) $x^2 = 560^2 + 330^2$

$x^2 = 313600 + 108900$

$x^2 = 422500$

$x = \sqrt{422500}$

$x = 650\text{m}$

(ii) $\tan\theta = \frac{\text{opp}}{\text{adj}}$

$\tan\theta = \frac{330}{560}$

$\theta = \tan^{-1}\left(\frac{330}{560}\right)$

$\theta = 30.5^\circ$ (correct to 1dp)

b) (i) $1\text{cm} = 200\text{m}$

$\therefore \frac{800}{200} = 4\text{cm}$ apart.

(ii) $800\text{m} = \frac{800}{1000}\ \text{km}$

$= 0.8\ \text{km}$

(iii) $3\overset{9}{4}:\overset{95}{35}$ 40 mins.

$3:55$

$0:40$

(iv) 40 mins $= \frac{40}{60}$ hrs

$= \frac{2}{3}$ hr.

(v) Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{0.8}{\frac{2}{3}}$

$= 0.4 \times \frac{3}{2}$

$= 1.2$ km hr^{-1}.

9. a) (i) $3x + 2y = 51$ — ①

$2x + 3y = 39$ — ②

(ii) ① × 3; $9x + 6y = 153$ — ③

② × 2; $4x + 6y = 78$ — ④

③ − ④; $5x = 75$

$x = \$15$

Subs. $x = 15$ in ①; $2y = 51 - 3x$

$2y = 51 - 3(15)$

$2y = 51 - 45$

$2y = 6$

$y = \$3$

1 pen = \$15

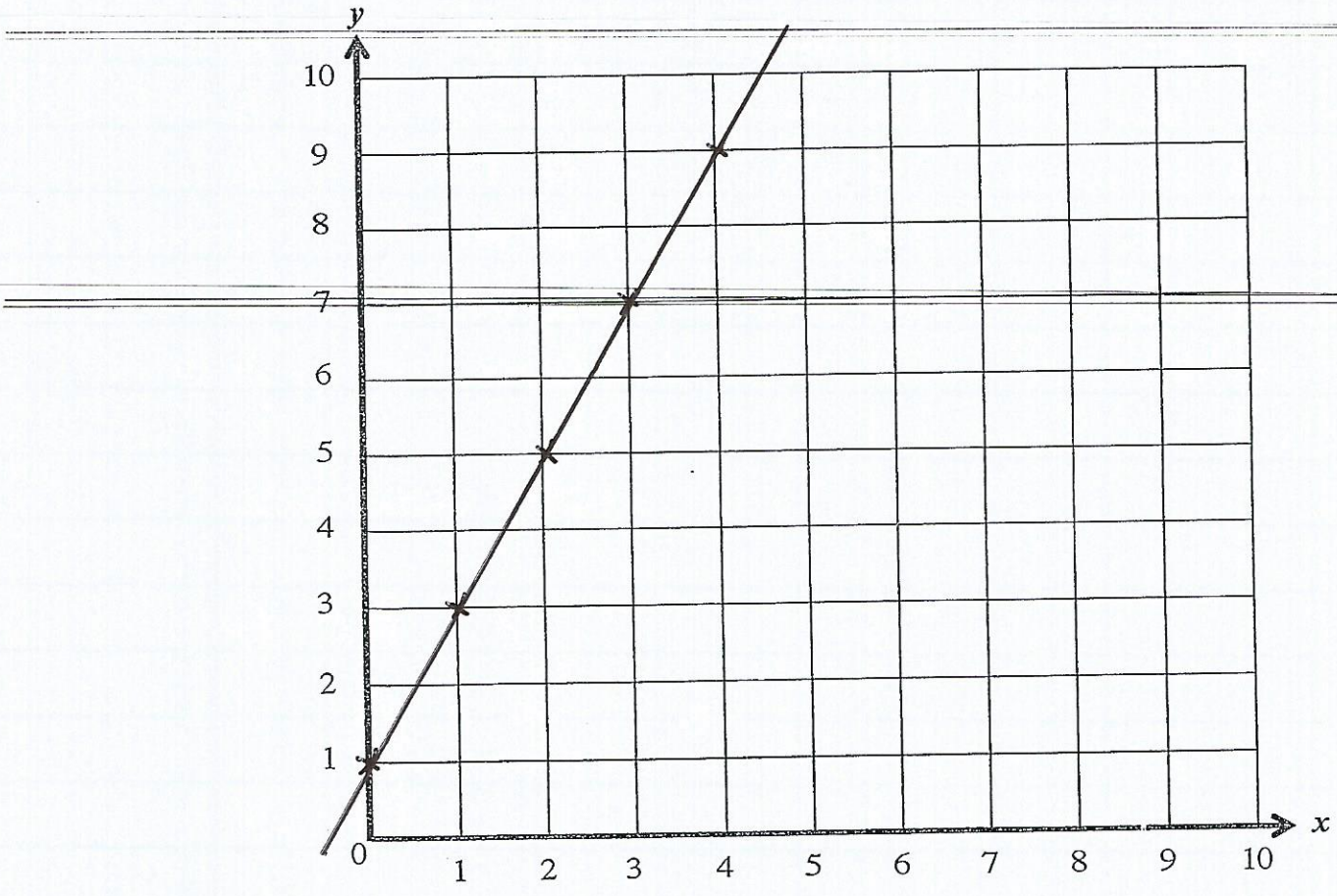
1 pencil = \$3

9. (b) The equation $y = 2x + 1$ gives the relationship between x and y.

(i) Use the equation to complete the table. [2 marks]

x	0	1	2	3	4
y	1	3	5	7	9

(ii) Using the grid provided, draw the graph of $y = 2x + 1$. [3 marks]



(iii) State the *y intercept* for the graph $y = 2x + 1$. [1 mark]

$y = 1$

END OF TEST