SECONDARY SCHOOL ANNUAL EXAMINATIONS 2006

Educational Assessment Unit - Education Division

_____

FORM 2   **MATHEMATICS (NON-CALCULATOR)**   **TIME: 10 minutes**
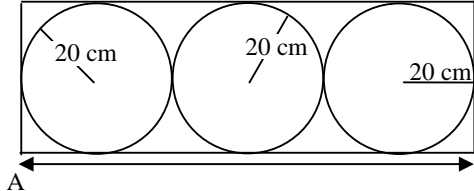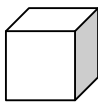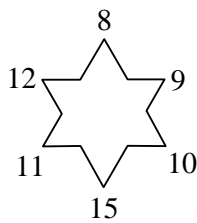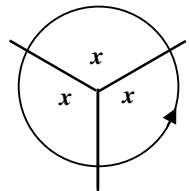
_____

Name :_____   **Class: _____**

Mark

INSTRUCTIONS TO CANDIDATES

- **Answer all questions. There are 10 questions to answer.**

- **Each question carries 1 mark.**

- **Calculators and protractors are not allowed.**

- **You are not required to show your working. However space for working is provided if you need it.**

_____

QUESTION	Space for working if required
1. What is the value of the figure **4** in 38.**4**5? a) $\dfrac{4}{100}$, b) $\dfrac{4}{10}$, c) 4, d) 40. **Ans:**_____	
2. $10 \times 10 \times 10$ is the same as: a) 30, b) 10^3, c) 10×3, d) 3^{10}. **Ans:**_____	
3. Write the distance of A from B. **Ans:**_____ cm	
4. Fill in to complete the sequence. 1, 4, 9, 16, 25, ☐ . **Ans:**_____	
5. 60% of the boys in a class have brown hair. What percentage do **not**? **Ans:**_____ %	
6. Give a **rough** estimate of **3.6 × 19**. **Ans:**_____	
7. One box weighs $1\frac{1}{2}$ kg. How much do **8** similar boxes weigh? **Ans:**_____ kg	
8. The **mean** of the numbers **7**, **9**, **9**, **14** and **21** is: a) 7, b) 12, c) 14, d) 21, e) 60. **Ans:**_____	
9. Which number on the star is a **prime** number? **Ans:**_____	
10. Write the value of x. **Ans:**_____ °	

SECONDARY SCHOOL ANNUAL EXAMINATIONS 2006

Educational Assessment Unit - Education Division

FORM 2						MATHEMATICS (Main Paper)								TIME: 1h 50 min			

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total Main	Non-Calc	**Global Mark**
Mark																		

DO NOT WRITE ABOVE THIS LINE

Name: _____   Class: _____

Calculators are allowed but all necessary working must be shown

ANSWER ALL QUESTIONS.
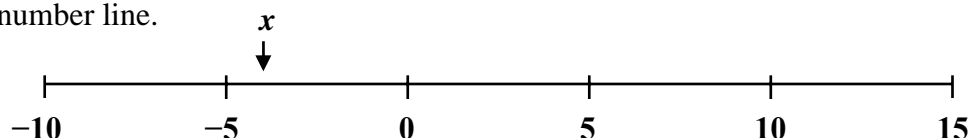
1. From the list of numbers: **14, 15, 18, 19, 20, 21** write down

    a) the smallest **odd** number   **Ans:** _____

    b) a **common** multiple of **6** and **9**   **Ans:** _____

    c) a **prime** number   **Ans:** _____

    d) a factor of **100**   **Ans:** _____

    (4 marks)

2. This is a number line.

    a) Which is **smaller** **−10** or **10**?

    Ans: _____

    b) Write the value of the number marked x on the number line.
        (6, −6, −4, 4)

    Ans: $x =$_____

    c) Work out: **−3 + 6**

    Ans: _____

    d) Arrange in order of size, starting with the smallest:
        4, −2, 0, −6.

    Ans: _____   _____   _____   _____

    (4 marks)

SS Form 2 Mathematics Main 2006   Page 1 of 10

3. a)   Shade $\frac{2}{5}$ of this group of circles.
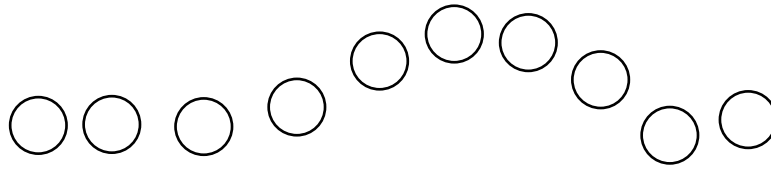
    b)   Complete: $\frac{2}{5}$ = _____%

Ans: _____%

    c)   Work out $\frac{2}{5}$ of 50 cents.
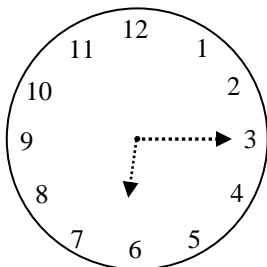
Ans: _____ cents

    d)   Which of these fractions is smaller than $\frac{2}{5}$?

           $\frac{1}{2}$, $\frac{2}{3}$, $\frac{1}{4}$

Ans: _____

(4 marks)

4. a)

This clock is **5 minutes slow**.

Fill in:

The **correct** time is [:]

    b)
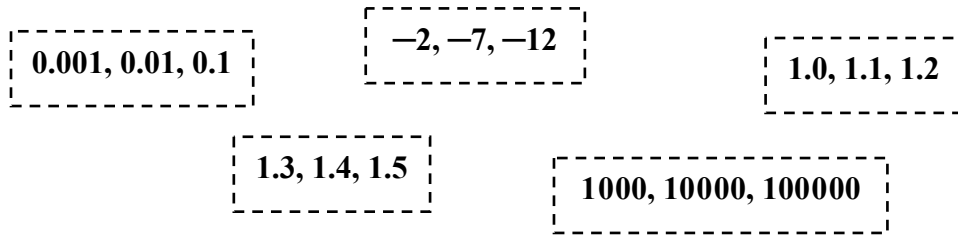
OFFICE HOURS
9.00 a.m. to 12.30 p.m.
1.30 p.m. to   4.30 p.m.

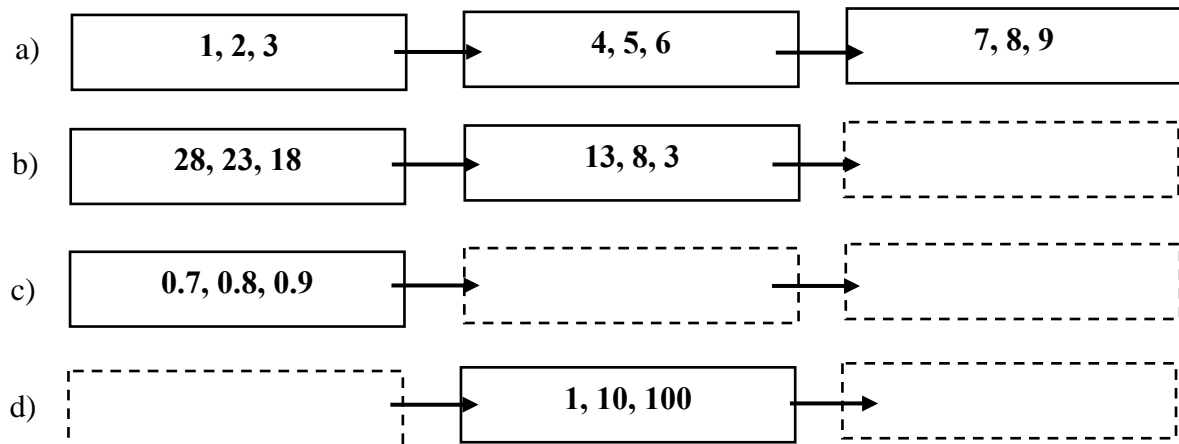How long is the office open?

Ans: _____hours _____minutes

(4 marks)

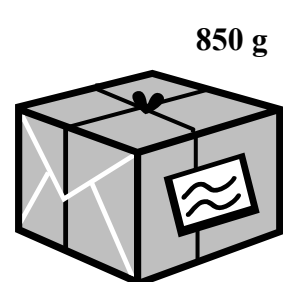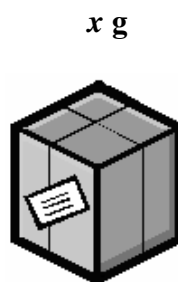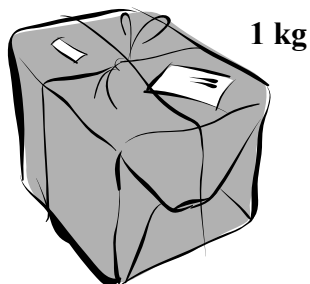5. Match the 5 cards to complete the sequences below.

0.001, 0.01, 0.1	−2, −7, −12	1.0, 1.1, 1.2
	1.3, 1.4, 1.5	1000, 10000, 100000

The **first** one is done for you.

a)
| 1, 2, 3 | → | 4, 5, 6 | → | 7, 8, 9 |

b)
| 28, 23, 18 | → | 13, 8, 3 | → | |

c)
| 0.7, 0.8, 0.9 | → | | → | |

d)
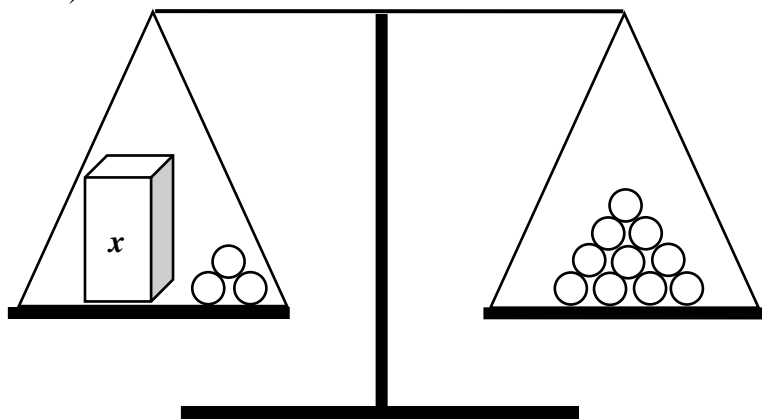| | → | 1, 10, 100 | → | |

(4 marks)

6. a)

1 kg x g   850 g

The **total** weight of the 3 parcels is 2.5 kg. How much does the **smallest** parcel weigh?

Ans: _____ g

6.   b)

Fill in to complete the equation representing the balance shown.
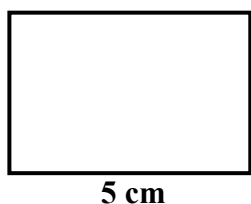
_____ + _____ = _____

   c)   Solve:
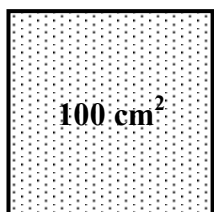
$$5x - 1 = 24$$

Ans: $x =$ _____

(6 marks)

7.   a)

The **perimeter** of the rectangle is 16.5 cm. The length is 5 cm.
How long is the other side?
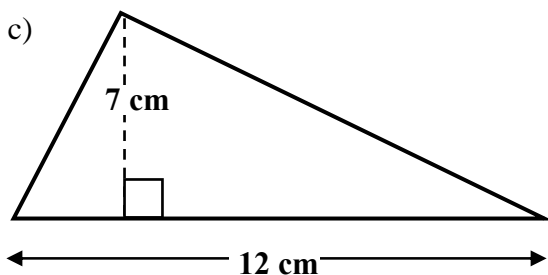
5 cm

Ans: _____ cm

   b)

100 cm²

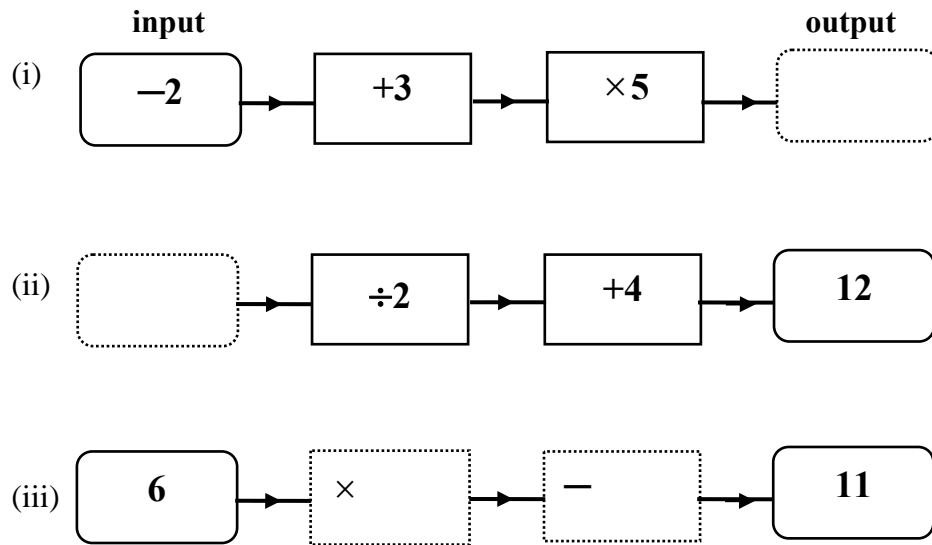The **area** of the square is 100 cm². What is the **length** of one side?

Ans: _____ cm

   c)

7 cm

12 cm

Calculate the **area** of the triangle.

Ans: _____ cm²

(6 marks)

8.	a)	Complete the function machines:

input   **output**

(i)	[−2] → [+3] → [×5] → [........]

(ii)	[........] → [÷2] → [+4] → [12]

(iii)	[6] → [×] → [−] → [11]

b)

b cm	*b* cm

b cm	*b* cm

a cm
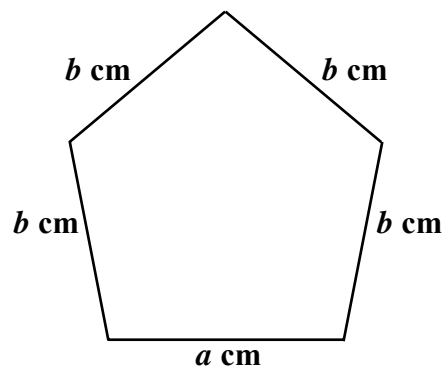
(i)	Complete the formula using the letters *a* and *b* for *P*, the **perimeter** of the pentagon:

$$P = 4\,\rule{1cm}{0.4pt} + \rule{1cm}{0.4pt}$$

(ii)	Work out the perimeter of the pentagon when *a* = 5 cm and *b* = 3 cm.
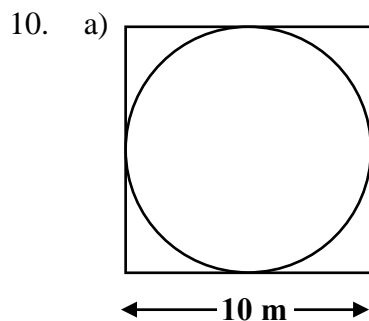
Ans: _____ cm

(6 marks)

9. a) Matthew types the following commands in **LOGO**:
        PD FD 20 RT 45 FD 20 HOME
        Draw the shape Matthew sees when he presses **ENTER**.

    b) Helga wants to work out 12×4 using a spreadsheet.

        Write the formula that she should type in the cell.

        (6 marks)

10. a)

        ─── **10 m** ───
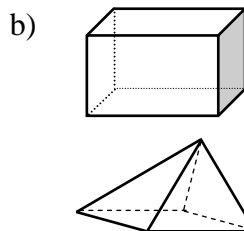
    (i)   I walk once round the border of the **square**.
          How far do I walk?

                        Ans: _____ m

    (ii) I walk once round the border of the **circle**.
          How far do I walk?
          Give the answer correct to 2 decimal places.
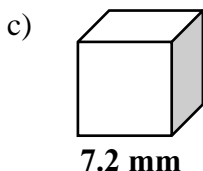
          (Hint: $C = 2\pi r$)

                        Ans: _____ m

    b)

        The cuboid has 12 **edges**.

        How many **edges** does the **square based pyramid** have?

                        Ans: _____ edges

    c)

        7.2 mm

        Work out the **volume** of the cube correct to the nearest whole number.

                        Ans: _____ mm^3

        (6 marks)

11. a)   James throws an ordinary dice that is numbered 1 to 6.

The **probability** that he gets a **THREE** is $\frac{1}{6}$.

Write down the **probability** that he gets

(i) a **TWO**   **Ans:** _____   (iii) a **FIVE** or **more**   **Ans:** _____

(ii) an **EVEN** number   **Ans:** _____   (iv) **less** than **FOUR**   **Ans:** _____

.

b)   Michael has a number of cards. He puts his cards in groups of **20**.

He has **3 complete** groups and **5 more** cards.

(i)   Which of the following best describes the above?

$5(3 \times 20)$, $(5 + 3) \times 20$, $5 + (3 \times 20)$

(ii)   How many cards does he have **altogether**?

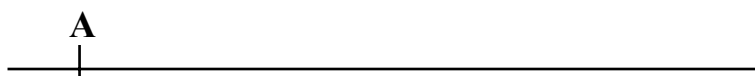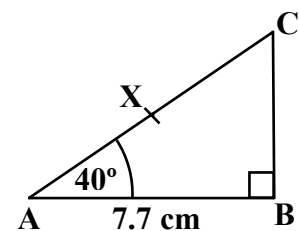**Ans:**_____ cards   (8 marks)

12.   The diagram shows a sketch of triangle ABC.

a) Construct triangle **ABC**.

b) Measure side **AC**.   **AC** = _____cm

c) Mark point **X**, the **mid-point** of **AC**.   **AX** = _____cm

d) Draw a circle with **centre X** and **radius** equal to A**X**.
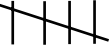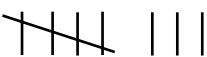
e) The **diameter** of the circle = _____cm.

A

(8 marks)

13. The table below shows the number of messages sent in one week by a group of children using a mobile phone.

4	4	4	9	9	11	12	12	12	12
13	13	13	21	21	28	29	31	33	34

a) **Complete** this frequency table

Number of Messages	Tally	Frequency
1 – 10	⊤⊢⊥	
11 – 20	⊤⊢⊥ ‖‖	8
21 – 30		
31 – 40	‖‖	3
	Total	

b) How many children sent **more** than **20** messages that week?　　　**Ans: _____** children

c) What was the **difference** between the largest and the smallest number of messages sent?
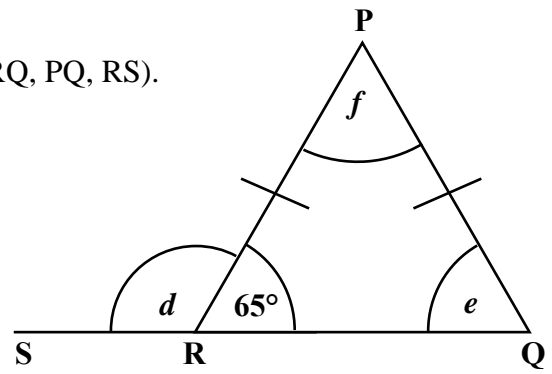
Ans: _____

d) Complete the bar chart **below** to illustrate your frequency table.

Number of Messages Sent
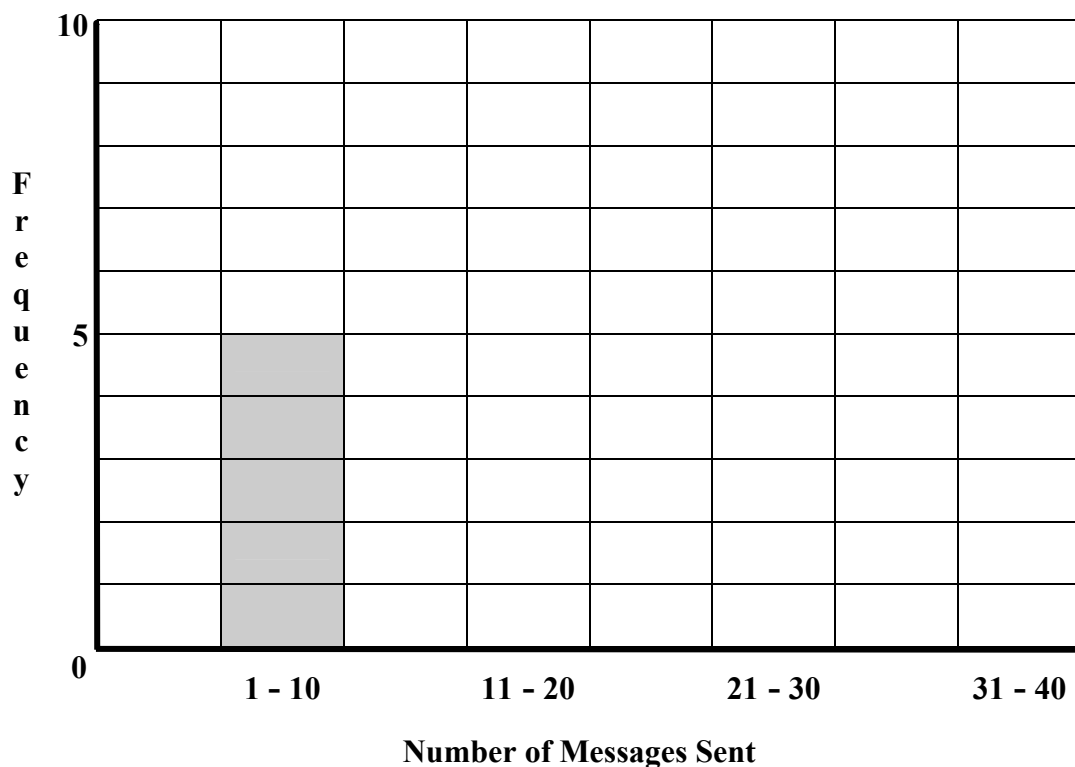
(8 marks)

14. a) (i) In triangle PQR, side **PR** = side _____(RQ, PQ, RS).

    (ii) Triangle PQR is called _____
    (scalene, equilateral, isosceles).

    (iii) Calculate the size of:
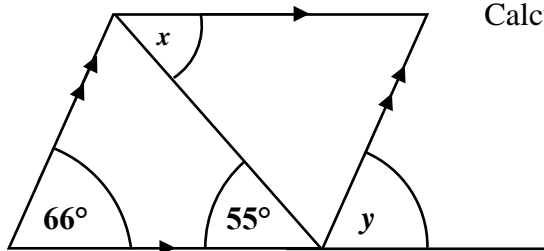
    angle *d*   angle *e*   angle *f*

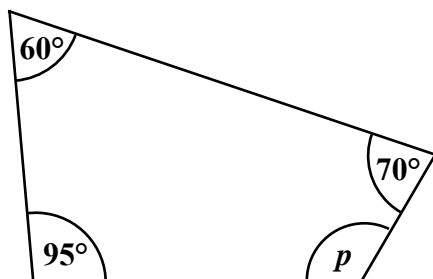   **Ans: *d* = _____°**   **Ans: *e* =_____ °**   **Ans: *f* = _____°**

    b)

    Calculate the size of the angles *x* and *y* :

    Ans: *x* = _____°

    Ans: *y* = _____°
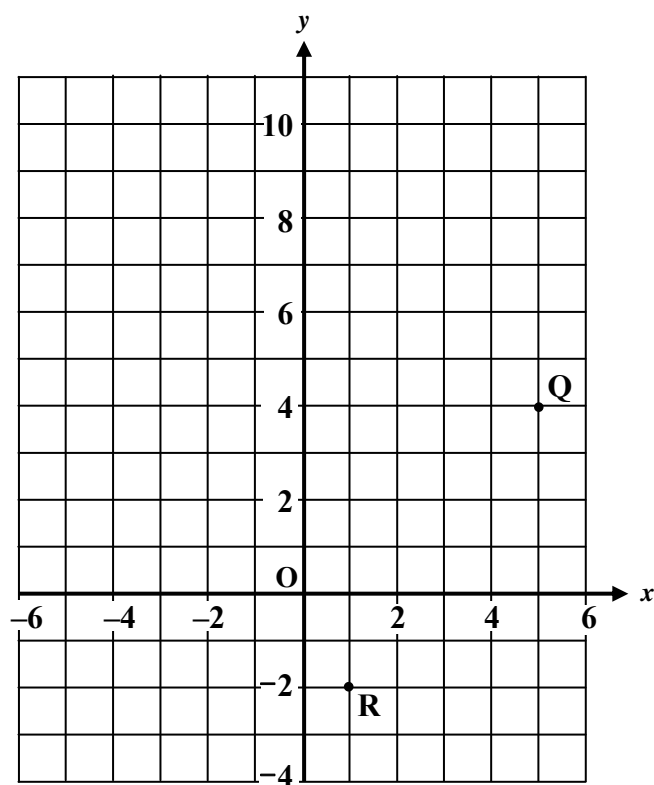
    c)

    Calculate the size of angle *p*.

    Ans: *p* =_____°

    (8 marks)

15.

You can see point **R** plotted at **(1, −2)**.

a)   Point **Q** is also plotted. The coordinates of **Q** are (,   )**.**

b)   Plot the points:

       P = (**1**, **10**) and **S** = (**−3**, **4**).

c)   Join **RS** and **SP**.

d)   Join **RQ** and **PQ**.

e)   Quadrilateral **PQRS** is called a _____ .

                                   (square, rectangle, rhombus, prism)

                                                            (8 marks)

End of Paper