FOR THE EXAMINER

EXAM. NUMBER:

Total Marks

Coimisiún na Scrúduithe Stáit
State Examinations Commission

JUNIOR CERTIFICATE EXAMINATION, 2008

MATHEMATICS – FOUNDATION LEVEL – (300 marks)

THURSDAY, 5 JUNE - MORNING, 9.30 TO 11.30

Time: 2 hours

Attempt **ALL** questions. Each question carries 50 marks.

Answers and supporting work should be written into the boxes provided.

Extra pages and graph paper can be obtained from the Superintendent, if needed.

The symbol ✍ indicates that supporting work must be shown to obtain full marks.

Make and model of calculator used:

For the Superintendent/Examiner use only:

Centre Stamp

Question	Mark
1	
2	
3	
4	
5	
6	
Total	
Grade	

1. **(a)**

(i)	$85 + 49 =$
(ii)	$85 \times 49 =$

(b)

(i)	$348 \div 6 =$
(ii)	$7 + 8(6 - 2) =$
(iii)	$5^2 =$
(iv)	$\sqrt{81} =$

(c)

(i) Write these numbers in order, starting with the smallest:

$$0{\cdot}5, \quad 1, \quad 0{\cdot}25, \quad 0{\cdot}6$$

Answer:

(ii) Place the numbers 3, 4, −2 and −3 in their correct positions on the number line below.
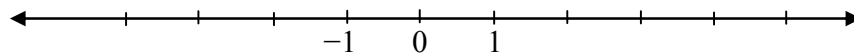
2. **(a)** Find the mode of the following numbers.

$$5, \quad 8, \quad 5, \quad 4, \quad 1, \quad 5$$

Mode:

(b) The following table shows the hours of sunshine each day for one week at Dublin Airport.
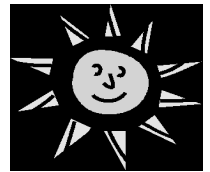
Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Hours	8	2	6	10	5	7	4

(i) Calculate the total number of hours of sunshine for the week.

✎

(ii) Calculate the mean number of hours of sunshine per day.
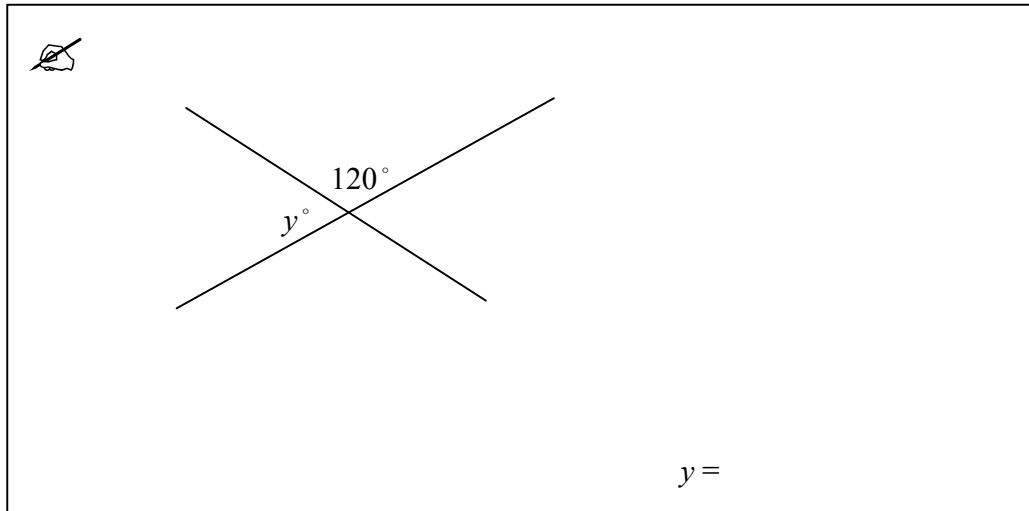
✎
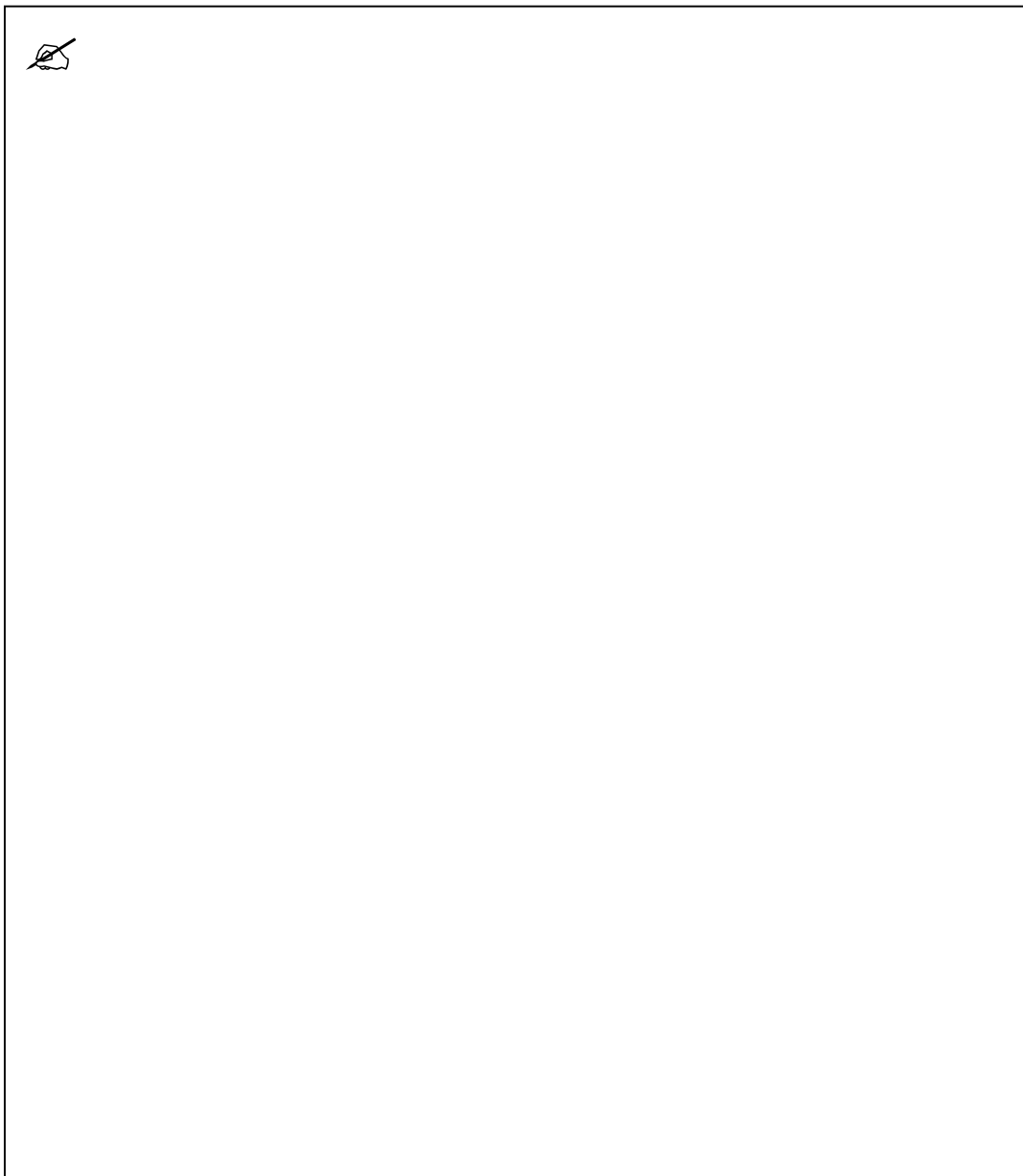
(c) 40 people were asked what colour of eyes they had.

The table shows the results.
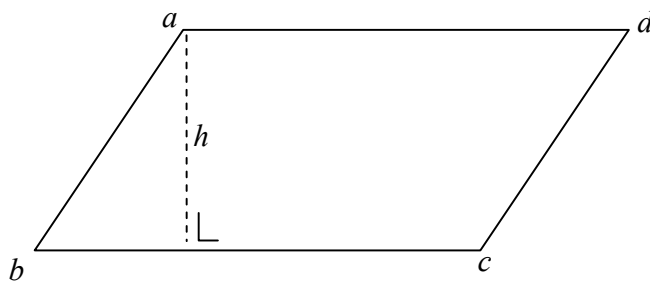
Colour of eyes	Blue	Green	Hazel	Brown
Number of people	10	10	5	15

Represent this information on a pie chart.

3. **(a)** Find the value of y in the following diagram.

$120°$

$y°$

$y =$

(b) *abcd* is a parallelogram.

a d

h

b c

(i) Using your ruler measure the length of the base [*bc*].

length of [*bc*] = _____

(ii) Using your ruler measure the perpendicular height h.

$h =$ _____

(iii) Calculate the area of the parallelogram.

(c) **(i)** Draw the image of the triangle in the diagram under the central symmetry in the point *o*.
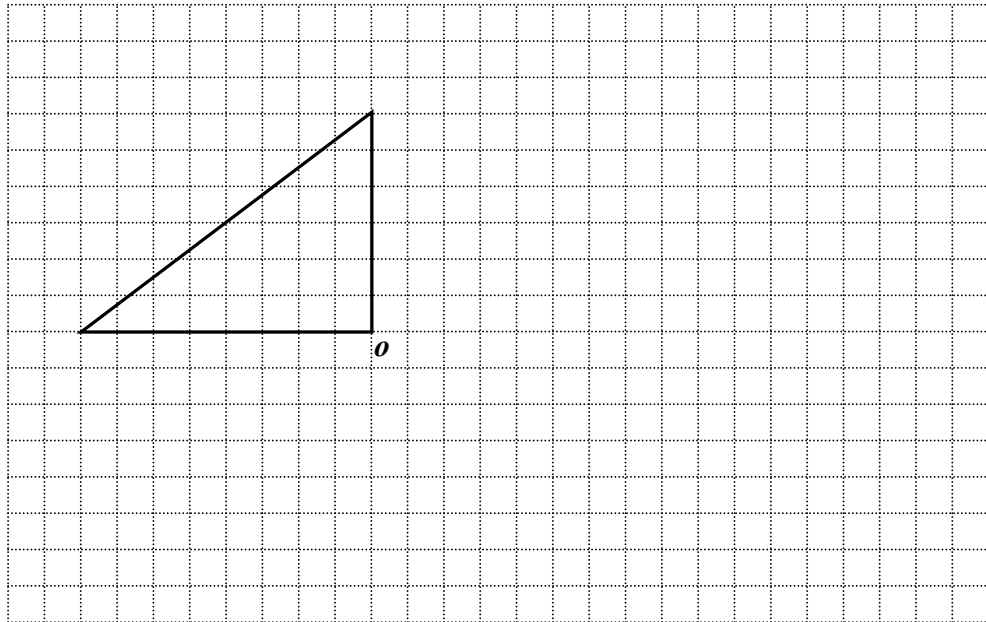
(ii) There are 3 different triangles in the diagram.

def is one of them.

Name the other two triangles.
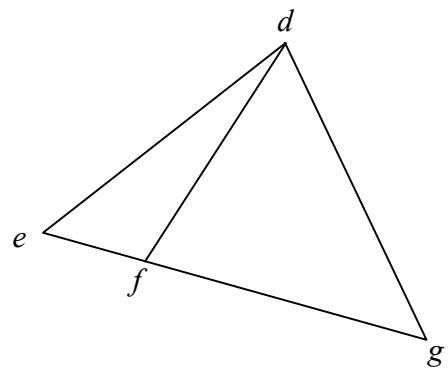
Answer: _____

Answer: _____

4. **(a)** Find the value of $3a + b$ when $a = 4$ and $b = 1$.

✍

(b) **(i)** Simplify $3(x+1) + 2(x-1)$.

✍

(ii) Solve for x:
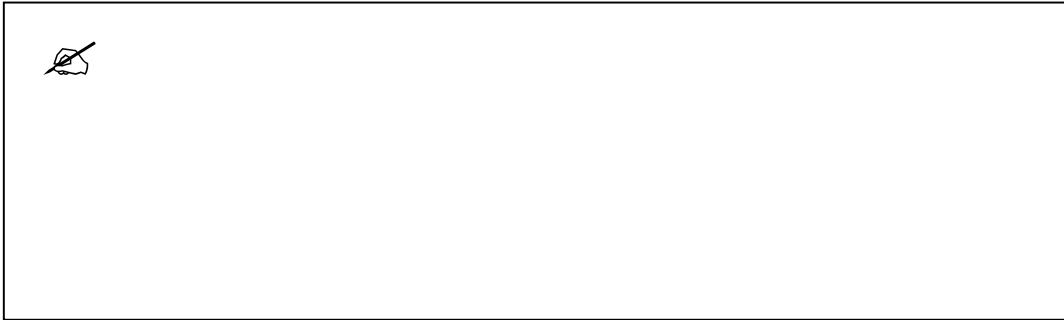
✍ $\qquad 2x + 3 = 13$

(c) **(i)** Given that $y = 3x + 2$, complete the table below.

x	1	2	3	4	5
y		8			

✎

(ii) Using your answers from **(i)**, draw the graph of $y = 3x + 2$ from $x = 1$ to $x = 5$.
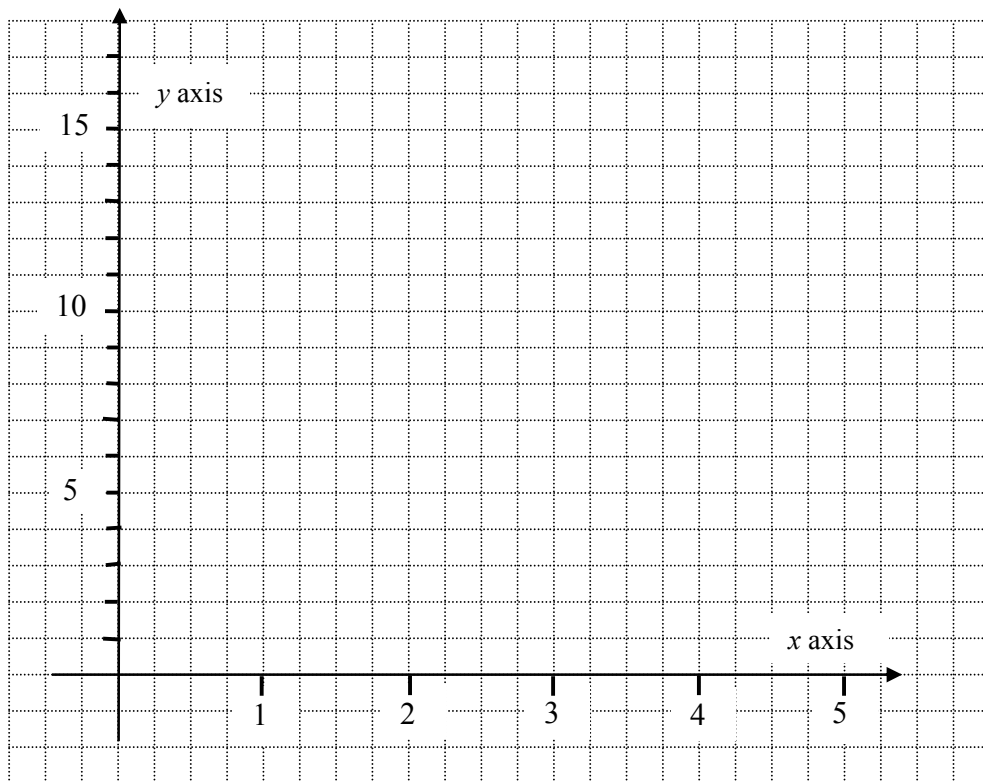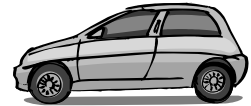

(iii) Use your graph to find the value of y when $x = 3\cdot5$.

5. **(a)** Change 4·72 kg to grams.

(b) A car travelled at a speed of 80 km/h for 2 hours.

    (i) Find the distance travelled by the car.

The car then travelled a further 150 km at a speed of 100 km/h.

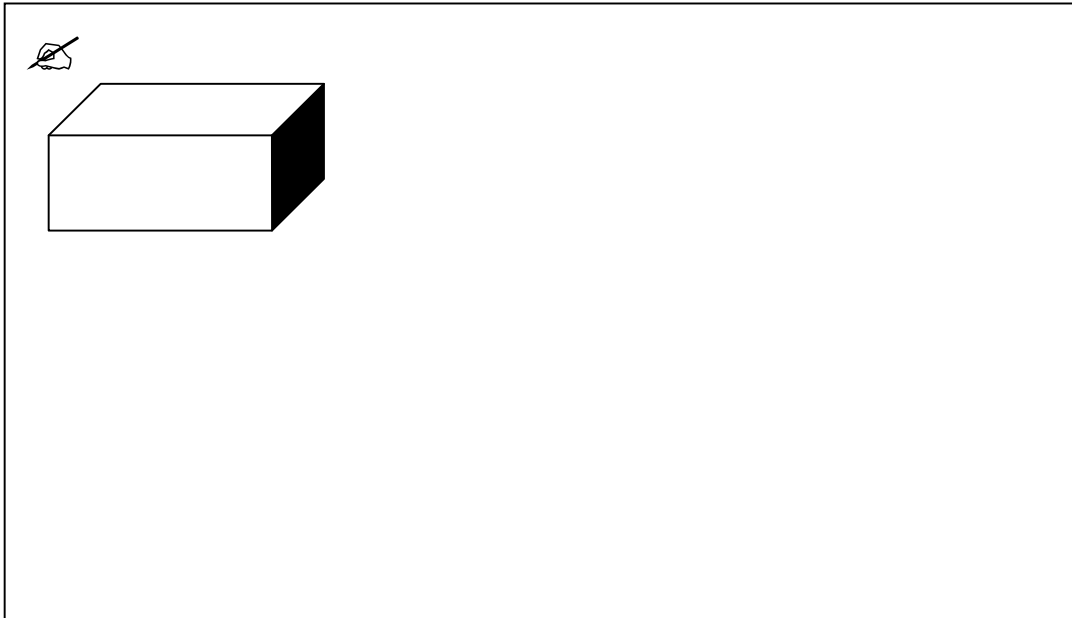   **(ii)** Find the time taken by the car to travel this 150 km.

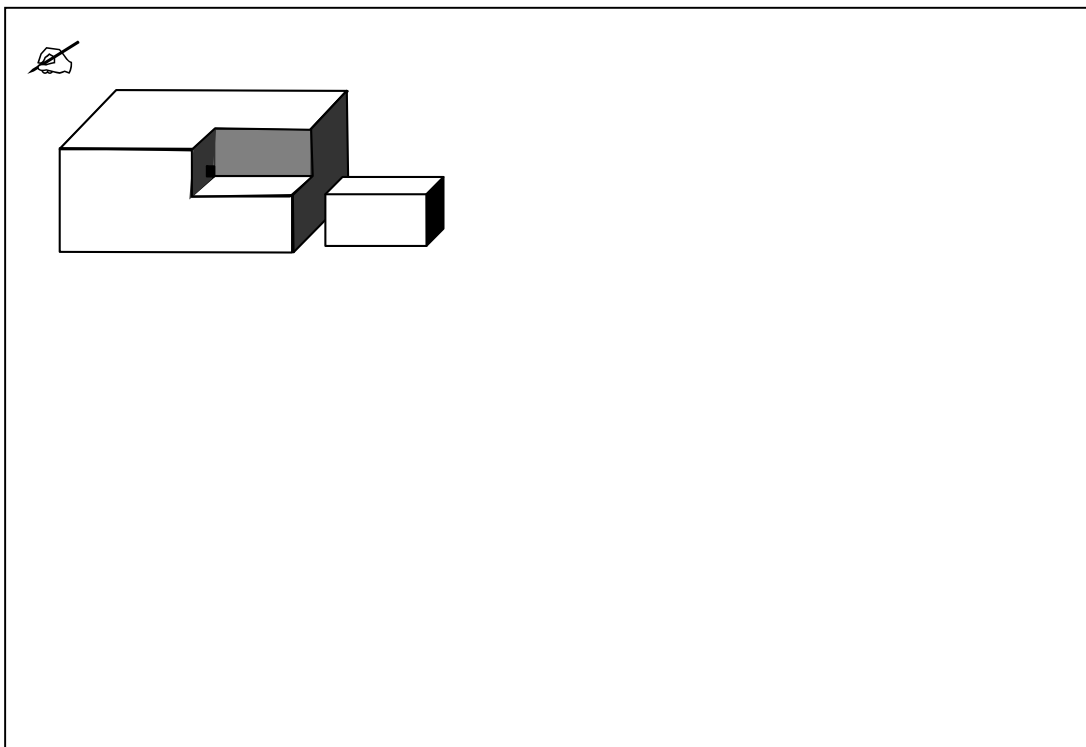   **(iii)** What was the total time spent travelling?

(c)   A rectangular block measures 30 cm $\times$ 18 cm $\times$ 16 cm.

   (i)   Calculate the volume of the block in cm^3.

   (ii)   A rectangular piece, measuring 15 cm $\times$ 7 cm $\times$ 8 cm is cut from this block.

   Calculate the volume that remains.

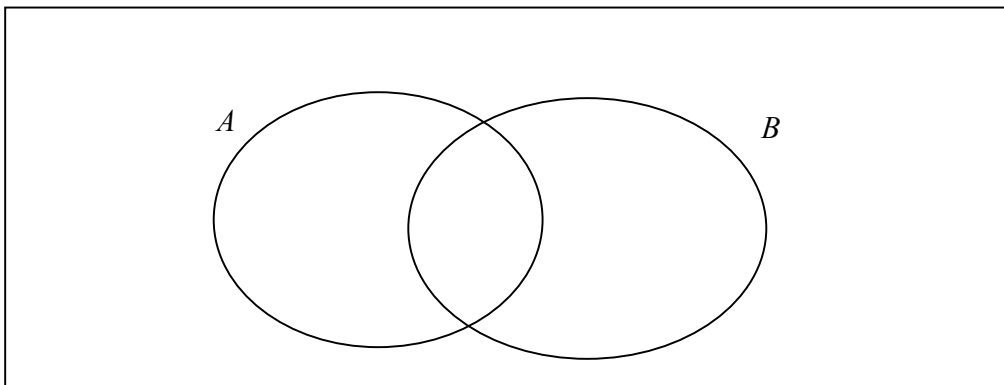**6.** **(a)** I purchased a cinema ticket for €7·50.

How much change did I get if I paid with a €20 note?

(b) **(i)** $A = \{1, 2, 3, 5, 6\}$ and $B = \{2, 3, 4, 6\}$

Show the elements of the sets A and B on the Venn diagram below.

A   *B*
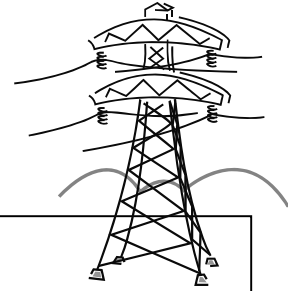
(ii) $P = \{a,\ b,\ n\}$.

$\{a,\ b\}$ is a subset of P.

Write down 2 other subsets.

Answer =

Answer =

(c) **(i)** A unit of electricity costs 14 cent.

Find the cost, in euro, of 400 units of electricity.

✎

(ii) A standing charge of €12 is added.

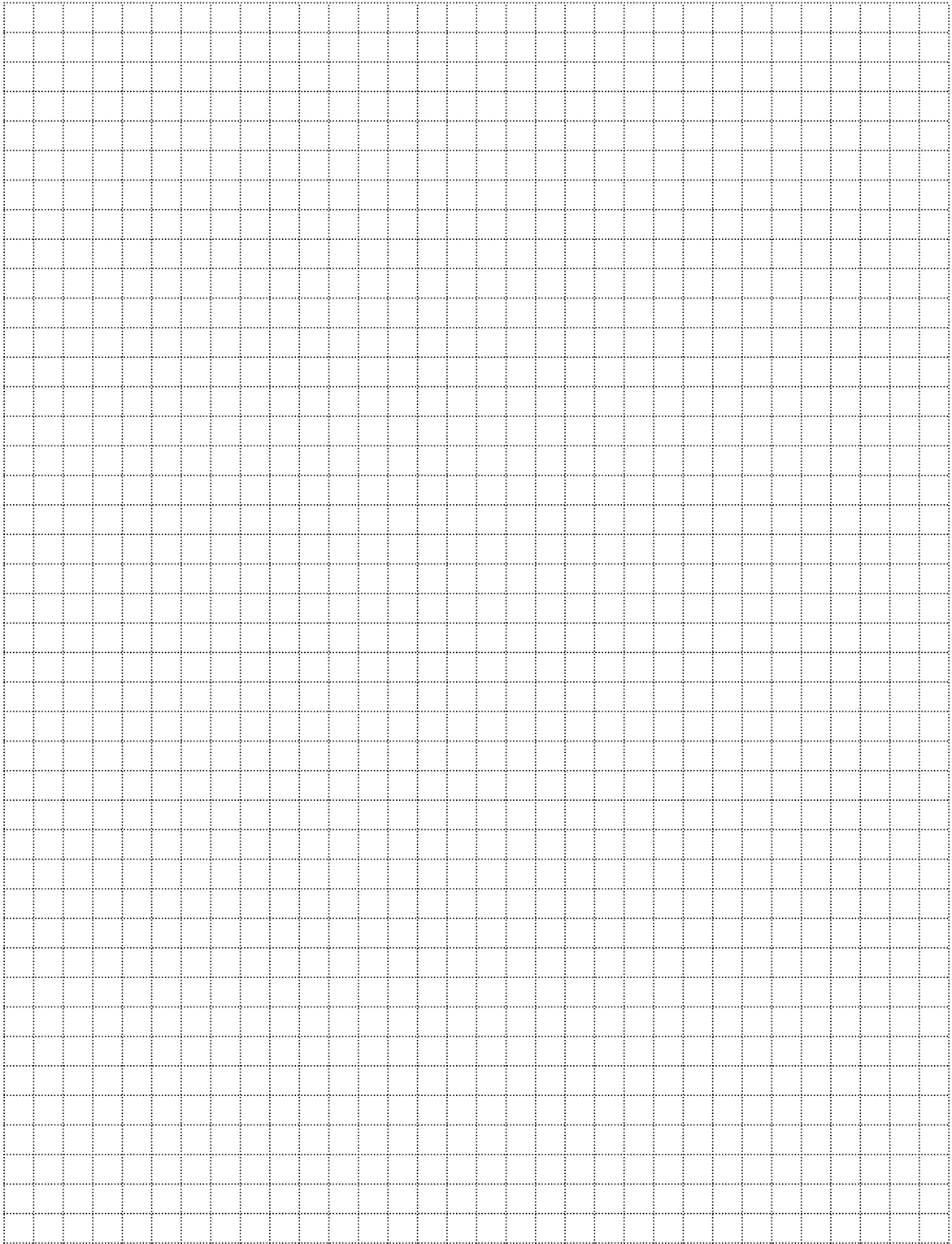What is the electricity bill when this charge is added?

✎

Cost of 400 units   =

Standing charge   =_____

Electricity Bill   =

(iii) What is the total electricity bill when VAT at 13·5% is added?

✎

Space for extra work

Space for extra work

Space for extra work