

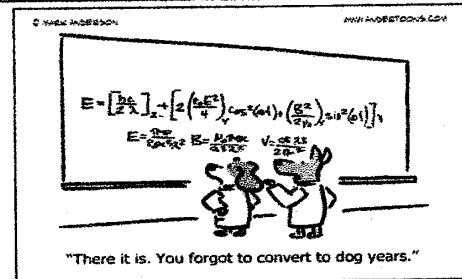
GRADE 7
TOTAL: 100

HERBERT HURD PRIMARY SCHOOL
MATHEMATICS EXAMINATION
FIRST SEMESTER

JUNE 2017
TIME: $1\frac{3}{4}$ hr

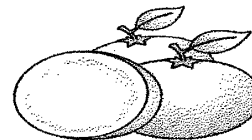
Instructions:

1. No calculators may be used.
2. All work must be completed in pencil.
3. No tippex allowed.
4. Marks have been allocated for working out.
5. Rule off after each section.
6. Check your work before handing in.



QUESTION 1: WHOLE NUMBERS (20)

- a) $30 + 6 \div 2 =$ (1)
- b) $30 \div 6 \times 2 =$ (1)
- c) $7 + 6 + 2 - 4 - 3 + 5 + 2 =$ (1)
- d) $56 \div 7 + 13 \times 2 =$ (1)
- e) Work out the LCM of: 12 and 15 (2)
- f) Use the ladder method to write the prime factors of 120 in exponential form. (3)
- g) Simplify the following ratio: 12 : 42 : 60 (1)
- h) True or False: $a + b \div c = b \div c + a$ (1)
- i) Which is cheaper?
3 oranges for R6,90 or 12 oranges for R30,00 (2)
- j) What is the quick and easy way to determine if a large number will be divisible by 4? (2)
- k) Share R200 so that your friend gets R30 more than you do.
How much money will you get? (2)
- l) A car travels for 2 hours and covers a distance of 240km.
How long will the car take to cover a distance of 600km
at the same constant average speed? (3)



QUESTION 2: EXPONENTS (15)

a) $(9 - 7)^2 =$ (2)

b) $(3 \times 10^6) + (5 \times 10^4) + (3 \times 10^2) + (9 \times 10^1) =$ (5)

c) $2\,365\,908 \times 10^0 =$ (1)

d) $\sqrt[3]{3 \times 4 \times 2 \times 2 \times 3 \times 4} =$ (2)

e) $\sqrt[3]{144 + 25} =$ (1)

f) $10^2 + (3^2 - 2)^2 \times \sqrt[3]{8} - \sqrt[3]{125} =$ (4)

QUESTION 3: PATTERNS, FUNCTIONS AND ALGEBRA (10)

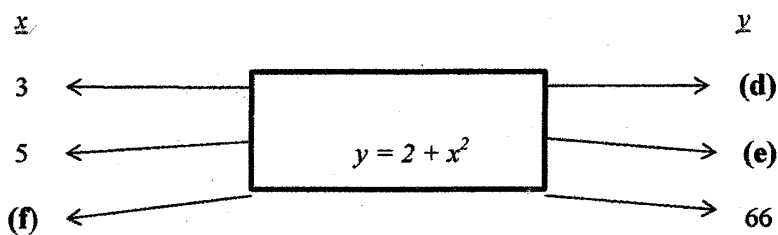
Determine the values of **a** and **b** using substitution. Show all your working out. (2)

x	1	2	3	100
$y = 5x - 4$	1	(a)	11	(b)

(c) Write down the **rule** for calculating the output values in the table below: (3)

x	4	5	6	7
y	22	27	32	37

Find the values for the letters: **d, e, f**. (Show all your working out.) (4)

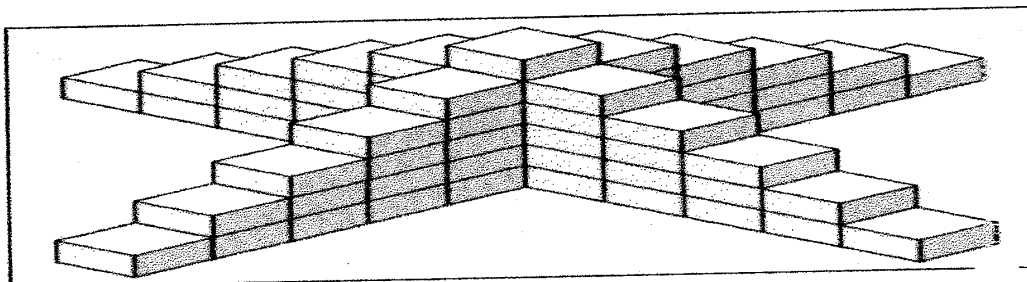


Calculate the value for **(g)** (1)

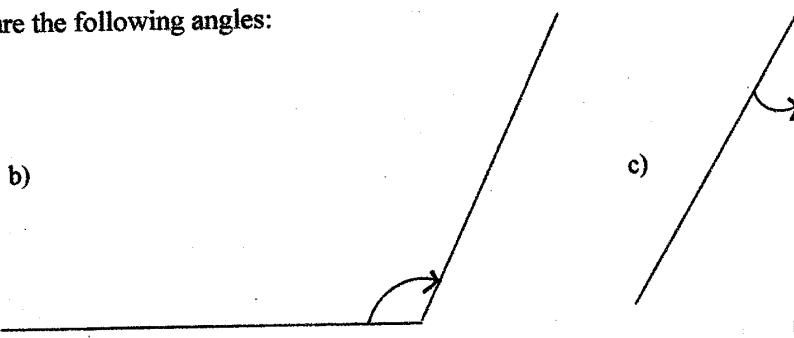
x	2	3	4	5
y	9	28	65	(g)

QUESTION 4: SPACE AND SHAPE (15)

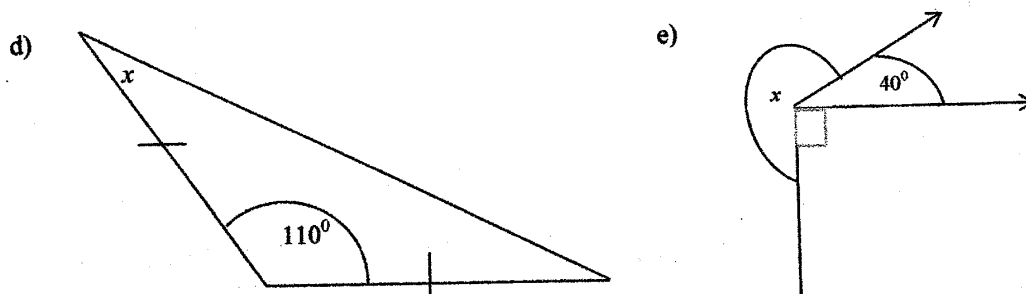
- a) How many blocks will be needed to create this design? (1)



Measure the following angles: (2)

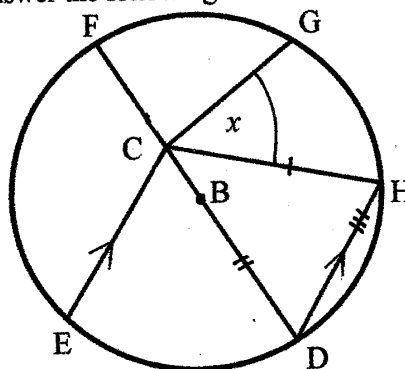


Calculate the sizes of the angles marked "x" in the sketches below: (Show your working out.) (4)



Use the circular sketch, with centre point B, to answer the following: (8)

- Name the chord
- Name a radius
- Name the diameter
- Which two lines are parallel?
- Name angle 'x'
- Is $\overline{FB} = \overline{BD}$?
- What kind of triangle is $\triangle CDH$?
- What kind of angle is $\angle ECF$?



QUESTION 5: FRACTIONS AND PERCENTAGES (25)

a) Simplify: $\frac{12}{42}$

b) Convert to a mixed number: $\frac{25}{7}$

c) $3 \times \frac{2}{6}$

d) $4 - 2\frac{2}{3} =$ (4)

Choose the correct percentage for Andile's tests from within the brackets.

e) English: 12 out of 20 (12% or 20% or 60%) (2)

f) EMS: 16 out of 40 (32% or 40% or 48%) (2)

Write the following as decimals: g) 45% h) $\frac{2}{500}$ i) 365% j) $\frac{10}{6}$ (4)

Calculate by showing all your working out:

k) $46,7 \div 1\,000 =$ l) $0,2 \times 5 \times 0,05 \times 0,1 =$ (2)

m) $R799 - R79,80 =$ n) $4,5 \div 4 =$ (4)

o) $2\frac{1}{3} \times 2\frac{1}{4} \times 1\frac{1}{7} =$ p) $2\frac{2}{5} + 1\frac{3}{4} - 3\frac{3}{10} =$ (6)

q) Calculate the interest you will receive after two years on an investment of R3 500 at an interest rate of 10% p.a. (3)

QUESTION 6: MEASUREMENT (15)

a) $3,6\text{m} = ? \text{ cm}$

b) $89\text{km} = ? \text{ m}$

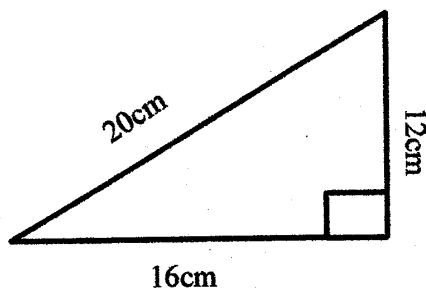
c) $456\text{ml} = ? \text{ litres}$

d) $23\text{g} = ? \text{ kg}$ (4)

e) A builder uses a 3m length of wood to cut 6 pieces of wood each measuring 355mm. What is the length of wood he has left over after cutting the 6 pieces of wood? (3)

Calculate the area and the perimeter of the following diagrams: (8)

f)



g)

