GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

# GAUTENG DEPARTMENT OF EDUCATION

## GRADE 8

## JUNE COMMON EXAM 2014

| | | |
|---|---|---|
| **SUBJECT** | **:** | **MATHEMATICS** |
| **TASK 5** | **:** | **COMMON EXAM** |
| **TIME** | **:** | **2 HOURS** |
| **MARKS** | **:** | **100** |

# INSTRUCTIONS AND INFORMATION

**1**. This Question Paper consists of two sections, Section A and Section B.

**2.** Section A has ten multiple choice questions and Section B has six Questions. Answer Section A on the answer sheet provided (**Annexure A).**

**3.** Answer ALL questions from both sections.

**4.** Write your name on top of all loose pages.

**5.** Read through the questions carefully and make sure that you allocate enough time for each question.

**6.** All workings must be clearly shown on the answer sheet unless otherwise stated.

**7.** It is in your best interest to write legibly and present your work neatly.

**SECTION A (1 × 10)**

## (No calculator may be used in this section)

1. Calculate 30 870 ÷ 49

   A. 63 B. 17 C. 630 D. 535

2. The HCF of 30 ; 210 ; 700 is:

   A: 5 B: 10 C: 15 D. 30

3. The LCM of 3 and 17 is:

   A: 102 B: 34 C: 51 D: 153

4. Simplify : $\frac{1}{3} \times \frac{1}{2} + \frac{3}{4} - \frac{2}{3}$ = …

   A: 0, 125 B: $\frac{7}{12}$ C: 0,25 D: $\frac{1}{15}$

5. Calculate: 14 + (-3 – 4) – (-7 + 2) = …

   A: 30 B: 2 C: 5 D: 12

6. Simplify: $\frac{5(2x-2)}{2} - 4$ = …

   A: 5x - 9 B: 10x - 8 C: 5x + 9 D: x – 1

7. Study the sequence and choose the correct answer.

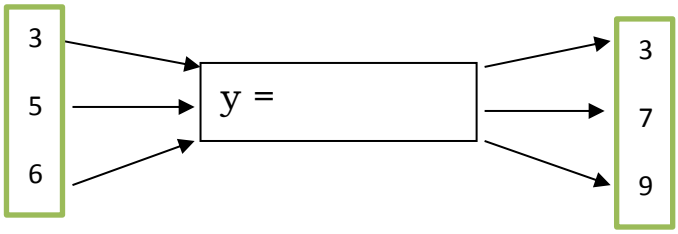
   1 ; 4 ; p ; 64 ; t ; …

   A: p = 8 and t = 108 B: p = 16 and t = 256 C: p = 6 and t =32 D: p = 5 and t = 74

8. Solve for x $\frac{3x}{5}$ = -3

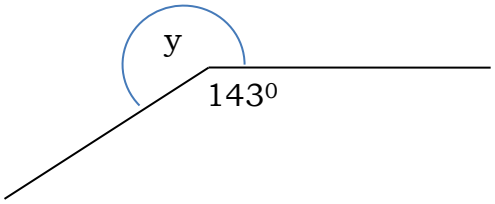
   A: x = 9 B: x = 18 C: x = 5 D: x = -5

9. Write down the equationdefining the relationship between the input($x$) on the left and output(y) on the right:




A: $y = 3x$ B: $y = x - 3$ C: $y = \frac{x}{3}$ D: $y = 2x - 3$

10. The angle marked y is equal to:




A : $43^0$ B: $37^0$ C: $217^0$ D: $227^0$

## SECTION B

### Question 1

1.1 Divide

$6\overline{)14436}$ (3)

1.2 Simplify :

1.2.1 $0,12(3+\frac{1}{3}) \div (1,35 + 0,65)$ (4)

1.2.2 $(\sqrt[3]{8} + \sqrt{16}) \div \sqrt{9}$ (3)

1.3 Suppose the temperature is $-14^0$C and it then rises by $5^0$C. What is the temperature now? (2)

**[12]**

### Question 2

2.1 The ratio of women engineers to men engineers in a construction company is 3:8. There are six women engineers. How many men engineers are there? (4)

2.2 The cost of breakfast cereal is R35 for 1 kg. Calculate how much 25 g of breakfast cereal will cost. (3)

2.3 Study the following pattern: 2 ; 5 ; 8 ;------ ; -----

2.3.1 Complete the pattern. (2)

2.3.2 Determine the rule for the pattern in the form $T_n$ = ……. (3)

2.3.3 Use the rule in 2.4.2 to find the $15^{th}$ term of the pattern (3)

**[15]**

**Question 3**

3.1 The price of a calculator is R125, but there is a discount of 30 % advertised. What will you have to pay for the calculator? (2)

3.2 Study the table below and answer the questions that follow.

| Currency | Rand/Dollar | Rand/Pound |
|---|---|---|
| Exchange Rate | 10,46 | 13,14 |

3.2.1 An English tourist visit South Africa and exchange her £2000 for Rands. How many Rands will she get? (3)

3.2.2 If you visited America and exchange R6000 for dollars, how much in dollars will you get? (3)

3.3 Calculate the interest you will get after 3 years when you invest R10 000 at a rate of 12 % simple interest per year. (4)

3.4 A lounge suit is priced at R7 500 at a furniture store. Mr Morris buys the lounge suit on a hire purchase scheme. He pays 10 % deposit and decides to take a repayment option of R350 per month for 24 months. Calculate the total amount he would pay for the lounge suit. (4)

**[16]**

**Question 4**

4.1 Write the following in scientific notation.

4.1.1 23000000 (1)

4.1.2 0,000725 (1)

4.2 Simplify.

4.2.1 $\frac{(xy^2)^3}{x^3y^4}$ (3)

4.2.2 $\frac{-12a^2b^3+8a^3b^2+6a^2b^4}{2a^2b^2}$ (4)

4.3 Simplify

4.3.1 $-2a(a-d)+2d(2a-3d)$ (3)

4.3.2 $\frac{6a+12b}{2}+\frac{4a+16b}{2}$ (4)

**[16]**

**Question 5**

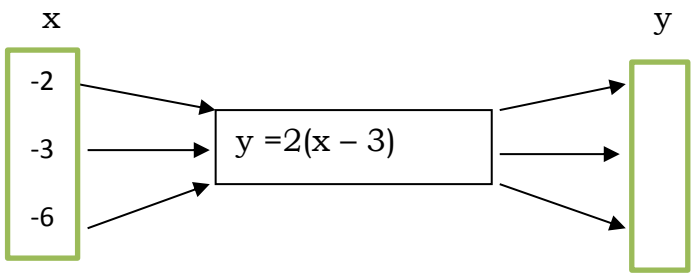
5.1 Solve the following equations.

5.1.1 $4x-3x-5=0$ (2)

5.1.2 $6x+2=4x-10$ (3)

5.1.3 $\frac{4x-1}{3}=5$ (4)

5.2 Calculate the output values of y. (4)

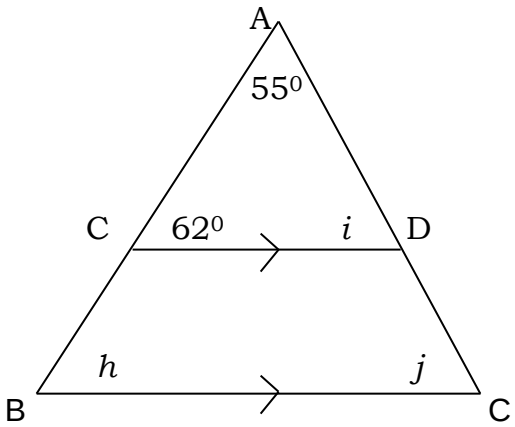


5.3 Christina buys three DVDs. Two of the DVDs cost x + y. The third DVD costs double this amount. Write an expression that shows the amount the three DVDs cost altogether. (3)

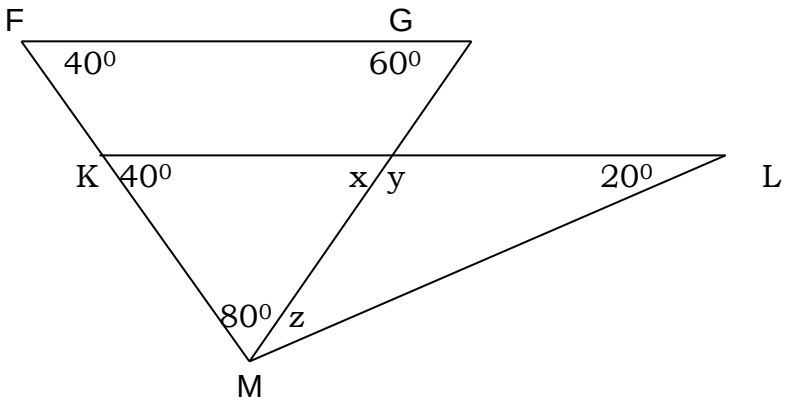
**[16]**

**Question 6**

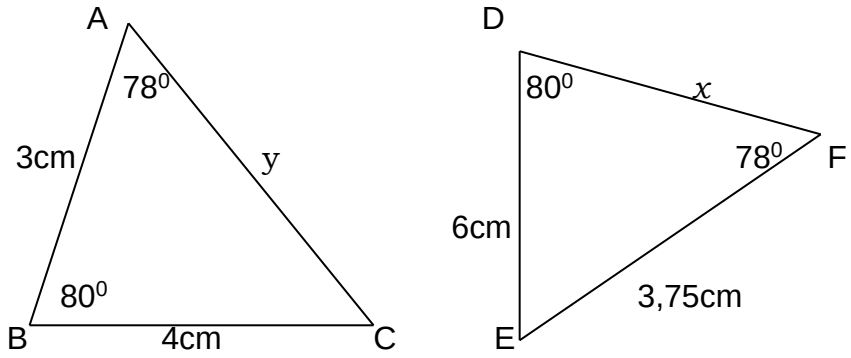
6.1 Find the sizes of the angles marked $i$, $h$ and $j$ with reasons. (6)



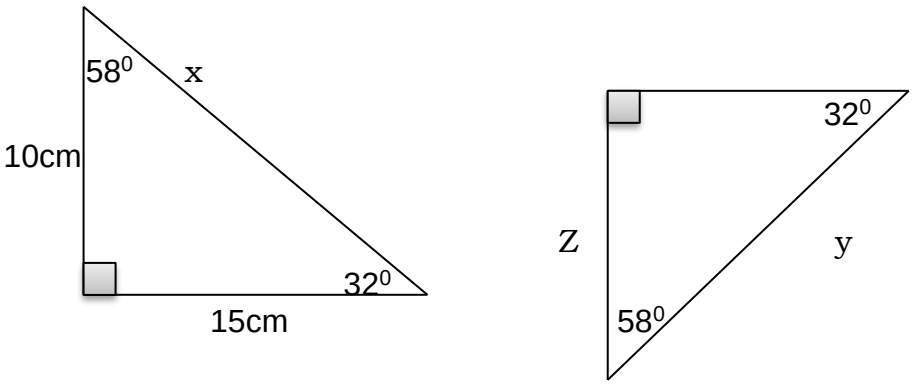

6.2 Find the sizes of the angles marked x and y with reasons. (4)



6.3 Study the triangles below and state why the triangles are similar. (2)




6.4 The two triangles are congruent. Find the lengths of the sides marked x and z with reasons. (3)

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**[15]**

**GRAND TOTAL = 100**

FORMULA SHEET

| Simple Interest: | Compound Interest: |
|---|---|
| $I = \frac{Prn}{100}$<br>$A = P(1 + in)$<br>$A = P(1 + \frac{rn}{100})$ | $A = P(1 + i)^n$<br>$A = P(1 + \frac{r}{100})^n$ |

| | **Perimeter** | **Area** |
|---|---|---|
| **Square** | $4(l)$ | $l^2$ |
| **Rectangle** | $2(l + b)$ | $l \times b$ |
| **Circle** | $2\pi r$ | $\pi r^2$ |
| **Triangle** | $(s1 + s2 + s3)$ | $\frac{1}{2} b \times\perp h$ |
| **Parallelogram** | $2(b + l)$ | $b \times\perp h$ |
| **Trapezium** | Sum of the 4 sides | $\frac{1}{2}(a + b) \times\perp h$<br>a and b = parallel lines |
| **Rhombus** | $4l$ | $b \times\perp h$ |
| **Kite** | $2(a + b)$<br>a and b = length of equal sides | $\frac{1}{2} \times d_1 d_2$<br>$d_1$ and $d_2$ = diagonal |

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**Annexure A**

Name: _____ Class: _____

Section A

Marks: ___
10

Circle the letter of the correct answer. **Submit this with your answer sheet.**

| **Question** | **Answer** | | | |
|---|---|---|---|---|
| **1.** | A | B | C | D |
| **2.** | A | B | C | D |
| **3.** | A | B | C | D |
| **4.** | A | B | C | D |
| **5.** | A | B | C | D |
| **6.** | A | B | C | D |
| **7.** | A | B | C | D |
| **8.** | A | B | C | D |
| **9.** | A | B | C | D |
| **10.** | A | B | C | D |