CANDIDATE NAME	

CANDIDATE NUMBER	

READ THESE INSTRUCTIONS FIRST

1.   Write your name and candidate number on the space provided at the top of this page.

2.   This paper is in two sections:

        SECTION A: (52 MARKS): All answers in this section must be written in the answer spaces provided.

        SECTION B: (48 MARKS): All answers in this section must be shown on the GRID provided. Read the instructions on how to use the ANSWER GRID at the beginning of SECTION B.
        Answer **all** questions in this paper.

3.   All necessary working must be done in the spaces below each question.

        SCRAP PAPER IS NOT ALLOWED. FAILURE TO SHOW NECESSARY WORKING WILL RESULT IN LOSS OF MARKS.

4.   Graph paper and tracing paper will be provided when needed.

5.   Calculators and tables are **not** allowed in this paper.

6.   At the end of the examination, hand in the question paper, the Answer Grid and any other paper used. Do not remove any pages from the question paper.

7.   **FAILURE TO FOLLOW THE ABOVE INSTRUCTIONS WILL RESULT IN LOSS OF MARKS.**

8.   The total of the marks for this paper is 100.

Section A
Answer all questions

1   State whether each of the following statements is true or false for a **kite**.
(The first one has been done for you.)

	True or False
Two pairs of sides are equal	True
It has 2 lines of symmetry	
It has rotational symmetry of order 2	
The diagonals are perpendicular to each other	
Opposite angles are equal	

(3)

2   Sipho knows of a clever way of working out

$$-123 + 130.$$

Sipho's Method:

$$-123 + 130 = -123 + 123 + 7$$
$$= 0 + 7$$
$$= 7$$

Use Sipho's method to work out

$$-145 + 300.$$ (Show your working clearly)

....

....

....

.... (2)

3 **(a)** Work out

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

(b) Express 65% as a fraction in its simplest form.

(a)..(2)

(b)..(2)

4 **(a)** How many terms are in the expression below?

$$3xy + 7xy - 4y - 2x + 5$$

(b) Simplify

$$4(3x + 1) - 2(x - 5)$$

(a)..(1)

(b)..(3)

5   **(a)**   Work out

        (i) $13.2 + 1.21$

        (ii) 1.2×0.4

    (b)   Work out the reciprocal of 1.5.
Give your answer as a fraction in its simplest form.

(a)(i)..(1)

(ii)..(2)

(b)..(2)

6   For the distribution

    2   7   9   1   6   1,

    Find

    (a)   the range,
    (b)   the mode,
    (c)   the median,

(a)..(1)

(b)..(1)

(c)..(2)

                309/01/OCT/NOV/2011

7 **(a)** Simplify

      (i) $x^4 \times x^6$

      (ii) $(x^2)^3$

    (b)   Given that $a = 3^{19}$ and $b = 3^{21}$, express 3^2 in terms of a and b.

(a)(i)...(1)

(ii)...(1)

(b)...(1)

---

8   Triangle ABC is such that $A\hat{B}C = 30°$, $B\hat{A}C = 3x°$ and $A\hat{C}B = 7x°$.
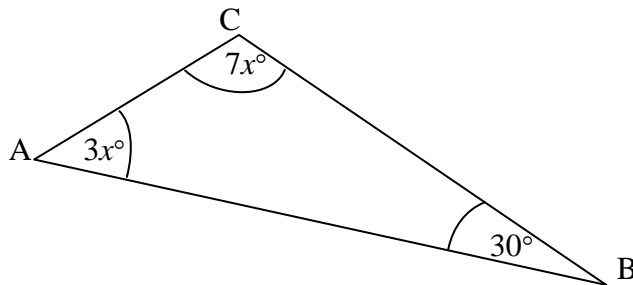
Find the value of x.

....(2)

9 **(a)** express the following numbers in standard form.

      (i)   273 000

      (ii)   0.000493

   (b) Work out, giving your answer in standard form.

      (i) $4 \times 10^{-2} \quad + \quad 2 \times 10^{-2}$

      (ii) $(3 \times 10^{3}) \quad \div \quad (6 \times 10^{-1})$

(a)(i)..(1)

(ii)..(1)

(b)(i)..(2)

(ii)..(2)

10 Estimate the value of $\sqrt{\dfrac{237.85}{2.4093}}$, correct to 1 significant figure.

(Show your working clearly)

....(3)

11 The equation of a straight line is $y = 5x + 1$.

    (a) Write down the gradient of the straight line.

    (b) The straight line passes through $(2, a)$ and $(b, -4)$.

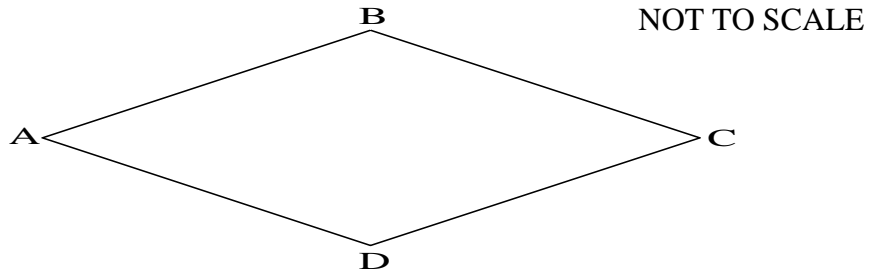   Find the values of a and b.

(a)..(1)

(b) $a =$ ....(1)

$b =$ ....(2)

---

12 Sindi uses $\dfrac{1}{5}$ of a roll of plastic cover to cover one exercise book.

What is the number of full roles she needs to cover 11 exercise books?

....(3)

13 ABCD is such that AB = BC = CD = AD,

$A\hat{B}C = A\hat{D}C$ and $B\hat{A}C = B\hat{C}D$. AC = 8 cm and BD = 6 cm.

B

NOT TO SCALE

A

C

D

(a) Write down the name of figure ABCD.
(b) Find the length of BC.

(a)...(1)

(b)...(3)

14 E 4500 is invested at 10 % compound interest per year.
Calculate the total investment after 2 year?

....(3)

15   The diagram shows a circle with centre O and radius 8 cm.

AB is a chord and $A\hat{O}B = 90°$.
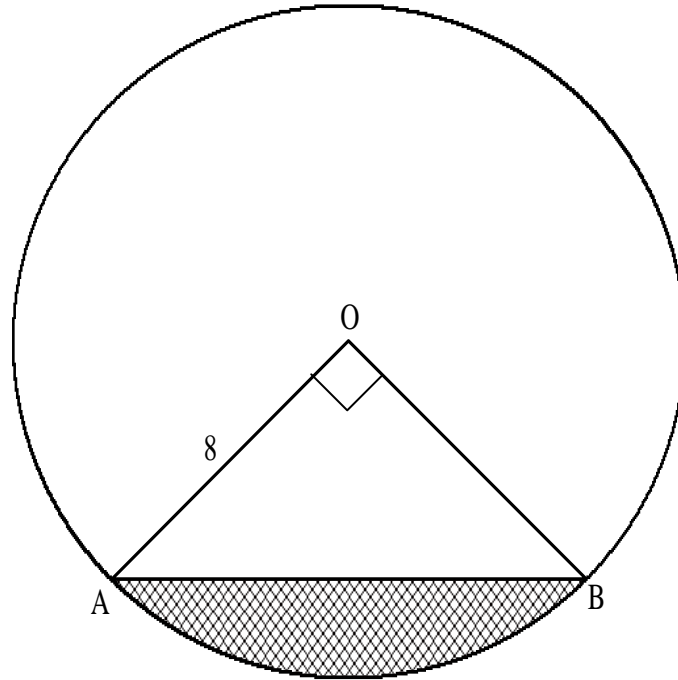
Calculate the area of the shaded segment.   (Use $\pi = 3.14$)

....(4)

SECTION B

Answer **all** questions

For each question, four possible answers are given. Work out which one is correct and mark it on the grid provided.

Example

60 $3 + 2 =$

   A 1   **B** 5   **C** 6   **D** 7

	A	B	C	D
60		$\times$		

---

16 $2 + 2 \times 10 - 16 \div (5 + 3) =$

   A 38   **B** 20   **C** 3   **D** 2

17 $90º < \theta < 180º$. θ is

   A obtuse   **B** acute   **C** reflex   **D** a right angle

18   Integers satisfying the inequality $-2 \leq x < 3$ are

   A –2, –1, 0, 1, 2   **B** –2, –1, 0, 1, 2, 3   **C** –1, 0, 1, 2   **D** –2, –1, 1, 2 3

19 $4 \text{ m}^2 =$

A 400 cm^2 **B** 4000 cm^2 **C** 40000 cm^2 **D** 400000 cm^2

20 $\dfrac{2x}{5} - \dfrac{x}{3} =$

A $\dfrac{x}{2}$ **B** $\dfrac{x}{15}$ **C** $\dfrac{2}{2}$ **D** $\dfrac{2}{15}$

21   Which of the following statements is true?

A   A pentagon has 6 sides

B   A triangle is a quadrilateral

C   A square is a rectangle

D   A pyramid is a prism

22   In a school, 2 % of the learners are absent. 10 learners are absent.

The number of learners present in the school is

A 10   **B** 90   **C** 490   **D** 500

23 A circle has a diameter 10 cm. Using $\pi = 3.14$, the area of the circle is
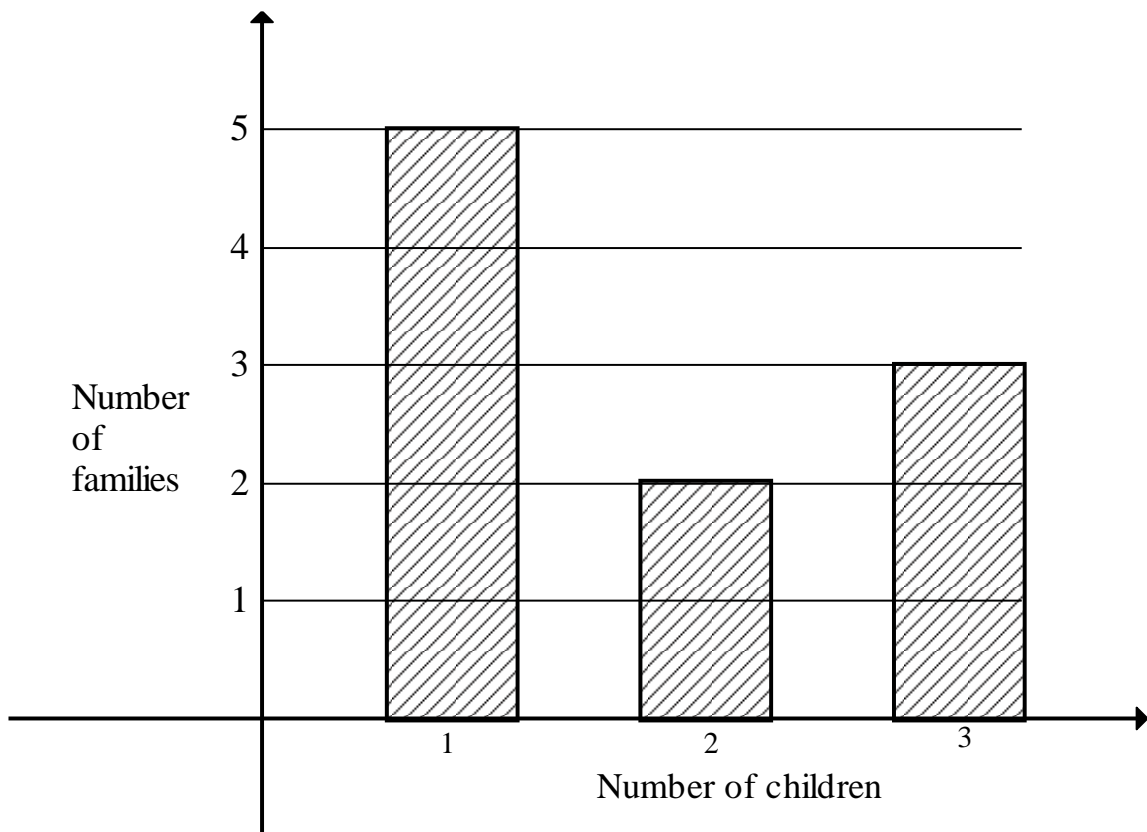
A 15.70 **B** 31.4 **C** 78.50 **D** 314

24 The ratio $\dfrac{2}{3} : \dfrac{4}{5}$ in its simplest form is

A 2 : 4 **B** 10 : 12 **C** 6 : 5 **D** 5 : 6

25 A $(-1, 3)$ and B $(4, -2)$. $\overrightarrow{AB} =$

A $\begin{pmatrix} 3 \\ -5 \end{pmatrix}$ **B** $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$ **C** $\begin{pmatrix} 5 \\ -5 \end{pmatrix}$ **D** $\begin{pmatrix} 5 \\ -1 \end{pmatrix}$

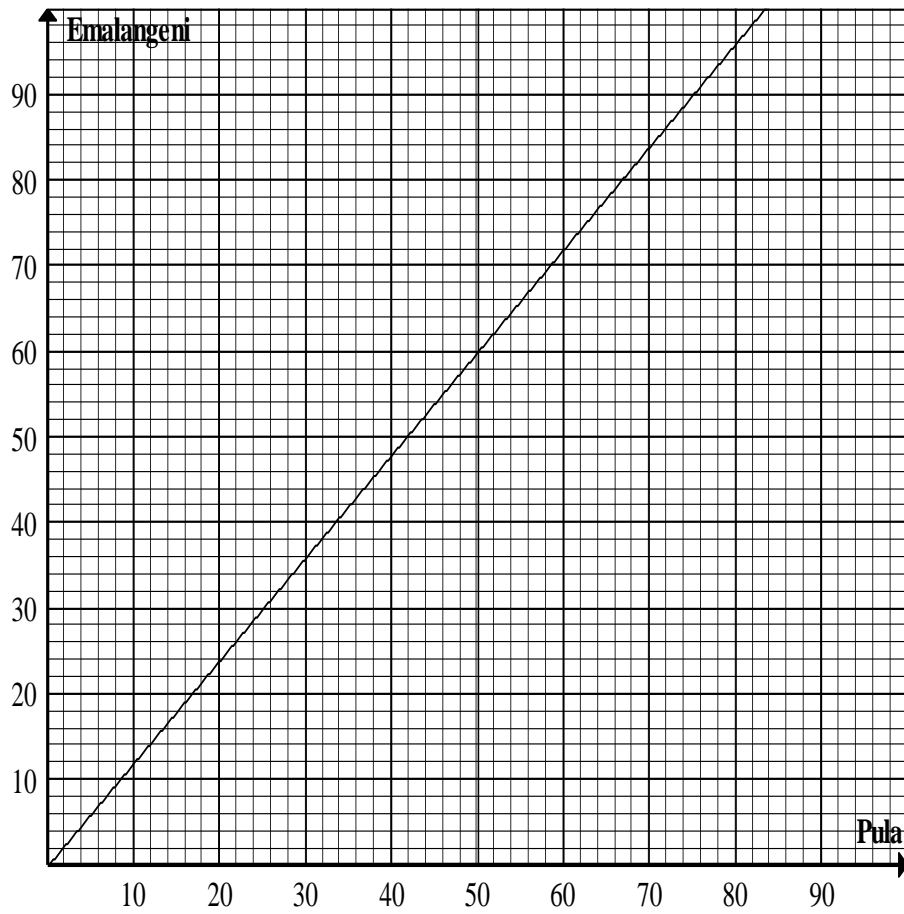**26** The following bar chart shows the number of children in 10 families.

The total number of children in the 10 families is

A 18   **B** 10   **C** 6   **D** 3

27 $y = 3x^2 - 5$

When $x = -1$, $y =$

A −11   **B** −8   **C** −2   **D** 4

28 The graph below shows the conversion rate between Emalangeni and Pulas on a particular day.

On this day, E 50 is equivalent to

A P 42   **B** P 50   **C** P 60   **D** P 72

29 135 minutes =

A 1.25 hours   **B** 1.35 hours   **C** 2.15 hours   **D** 2.25 hours

30 $0.2x + 0.4 = 0.7$

The value of x is

A 1.5   **B** 15   **C** 20   **D** 35

31   There are 28 balls in a bag. The bag contains black and white balls only. The probability of choosing a black ball from the bag is $\frac{4}{7}$. The probability of choosing a white ball is

A $\frac{3}{7}$ **B** $\frac{4}{7}$ **C** 12   **D** 16

	A	B	C	D
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				