EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

MATHEMATICS **6880/03**

Paper 3 Short-Answer Questions (Extended) **October/November 2024**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Scientific Calculator
Geometrical instruments

READ THESE INSTRUCTIONS FIRST

Write your name, centre number and candidate number in the spaces provided.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do **not** use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

If working is needed for any question it must be shown below that question.
The number of marks is given in brackets [ ] at the end of each question or part question.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures.
Give answers in degrees to one decimal place.

For π, use your calculator value or 3.142.
The total number of marks for this paper is 80.

For Examiner's Use	
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This document consists of **13** printed pages and **3** blank pages.

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1 Arrange the numbers in order of size starting with the smallest:

17% , $\frac{68}{399}$, 0.055π , $\tan 10°$, 0.107

Answer ..... , ... , ... , ... , ... [2]

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2 **Do not use a calculator.**

Work out the following.

Show all your working.

(a) $3\frac{3}{5} - 1\frac{2}{3}$

Answer (a) ..... [3]

(b) $\frac{7}{9} \div \frac{5}{3}$

Answer (b) ..... [2]

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3 **(a)** Write 134.9758 correct to

(i) the nearest thousandth,

Answer (a)(i) ..... [1]

(ii) decimal place.

Answer (a)(ii) ..... [1]

(b) Mpho said all prime numbers are odd numbers.

Give an example to show that Mpho is not correct.

.....

..... [1]

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4 **(a)** Write 0.375.

(i) as a fraction in its simplest form,

Answer (a)(i) ..... [1]

(ii) as a percentage.

Answer (a)(ii) .....% [1]

(b) Write 37.5 cm in kilometres.

Give your answer in standard form.

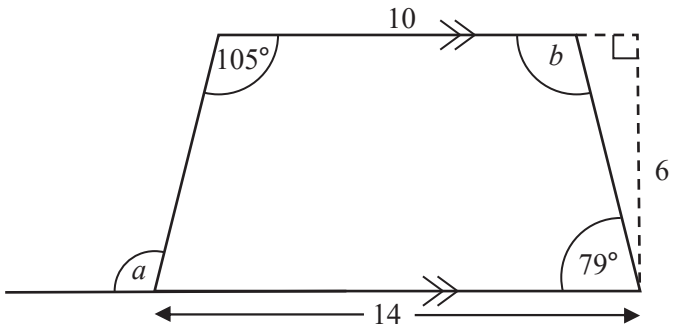
Answer (b) ..... [2]

(c) Write one hundred and thirty four thousand and four in numeric form.

Answer (c) ..... [1]

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5 A trapezium is shown below.



(a) Find the value of a and the value of b.

Answer (a) $a =$ ..... [1]

$b =$ ..... [1]

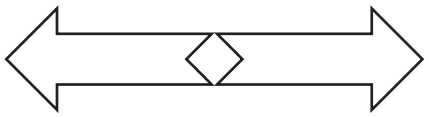
(b) Calculate the area of the trapezium.

Answer (b) ..... [2]

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[Turn over

6



(a) Draw all lines of symmetry of the figure. [2]

(b) State the order of rotational symmetry of the figure.

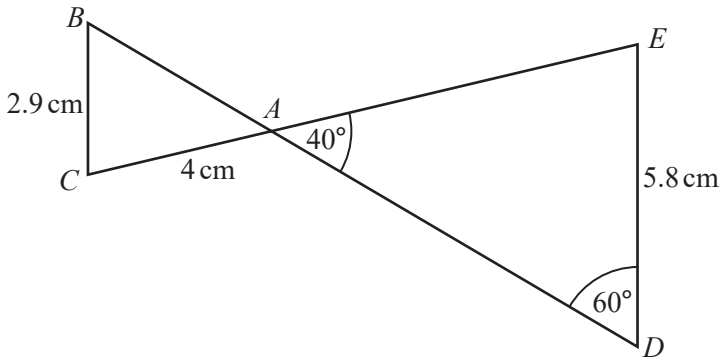
Answer (b) ..... [1]

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7 In the diagram, triangle ABC and triangle ADE are similar.

$BC = 2.9$ cm
AC = 4 cm
$DE = 5.8$ cm
$D\hat{A}E = 40^{\circ}$
$A\hat{D}E = 60^{\circ}$

NOT TO SCALE



(a) Find the length of AE.

Answer (a) ..... cm [2]

(b) Find $B\hat{C}A$.

Answer (b) .....° [1]

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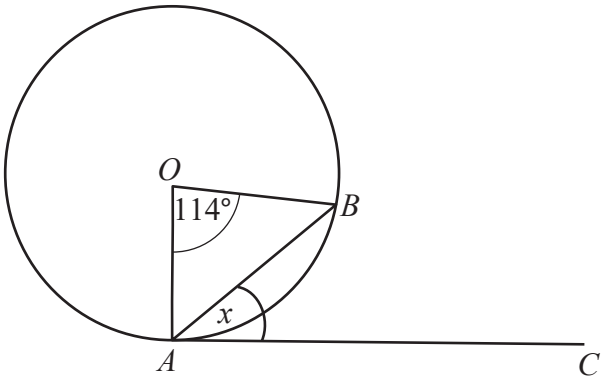
8 Solve $\tan x° = -\frac{5}{12}$ for $0 \leq x \leq 360$.

Answer $x =$ ..... or $x =$ ..... [2]

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9 The diagram shows a circle with centre O.

AC is a tangent to the circle at A.



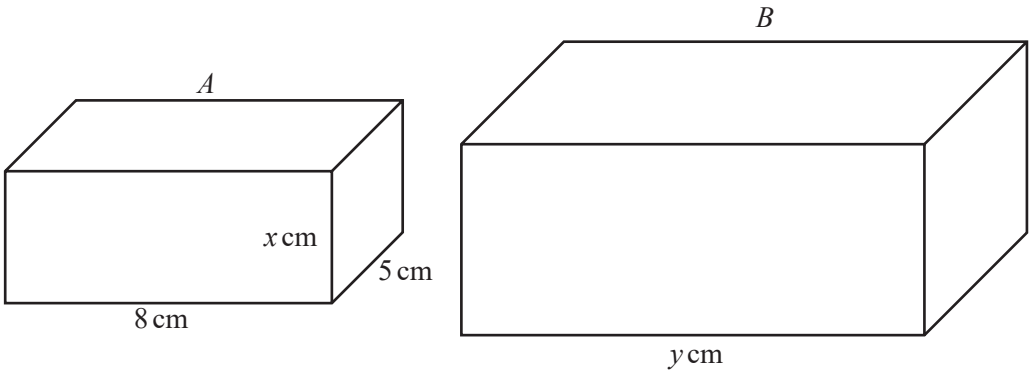
Find the angle x.

Answer ..... ° [2]

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10 Cuboid A is similar to cuboid B.

The volume of cuboid A is 120 cm^3.



(a) Find the value of x.

Answer (a) ..... [1]

(b) The volume of cuboid B is 405 cm^3.

Work out the value of y.

Answer (b) ..... [3]

---

11 You are given

$\underline{a} = \begin{pmatrix} 3 \\ -1 \end{pmatrix}$, $\underline{b} = \begin{pmatrix} 4 \\ 7 \end{pmatrix}$ and $\underline{c} = \begin{pmatrix} 10 \\ 5 \end{pmatrix}$.

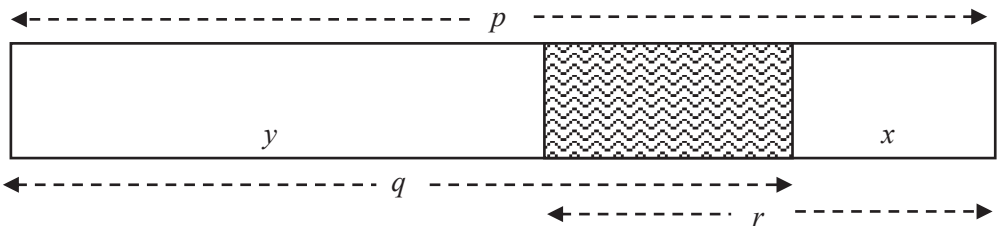
If $\underline{c} = k\,\underline{a} + \underline{b}$, find the value of k.

Answer $k =$ ..... [2]

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(a) Express the length x in terms of p and q.

Answer (a) ..... [1]

(b) Express the length y in terms of p and r

Answer (b) ..... [1]

(c) Hence write the length of the shaded part in terms of p, q and r.

Answer (c) ..... [2]

---

13 Solve.

$$4 \leq \frac{11 - x}{2} < 8$$

Answer ..... [3]

---

14 Solve the equation.

$$\frac{8-x}{2} = \frac{2x+2}{5}$$

Answer $x =$ ..... [3]

---

15 You are given

$f(x) = 3 - 6x$
$fg(x) = 3 - 4x$
$f(x)h(x) = 6x - 12x^2$.

Find

(a) $g(x)$,

Answer (a) ..... [2]

(b) $h(x)$,

Answer (b) ..... [3]

(c) $f^{-1}(x)$.

Answer (c) ..... [2]

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16 Write the equations of these lines in the form $y = mx + c$.

(a) Line passing through $(-1, -1)$ and $(2, 8)$

Answer (a) ..... [3]

(b) Line perpendicular to the line $2y + 10x = 4$, passing through $(0, 5)$

Answer (b) ..... [3]

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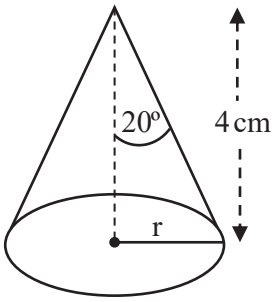
17 The lines with equations $3x + y = 11$ and $5x - 2y = 22$ intersect at A.

Find the coordinates of A.

Answer (..... , ...) [3]

For Examiner's Use

18 **(a)** In the cone, the angle between the slant height and the perpendicular height is 20°. The perpendicular height of the cone is 4 cm .



NOT TO SCALE

Calculate the base area of the cone.

Answer (a) ..... cm^2 [3]

(b) A hemisphere has a volume of 134 cm^3.

[*Volume of a sphere* $= \frac{4}{3}\pi r^3$, *Surface area of a sphere* $= 4\pi r^2$]

Calculate

(i) the radius of the hemisphere,

Answer (b)(i) ..... [3]

(ii) the curved surface area of the hemisphere.

Answer (b)(ii) ..... [2]

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19 (a) Use the table below to state the modal class

Time	Frequency
36 – 45	3
46 – 65	17
66 – 70	9
71 – 85	21
86 – 95	4

State the modal class

Answer (a) ..... [1]

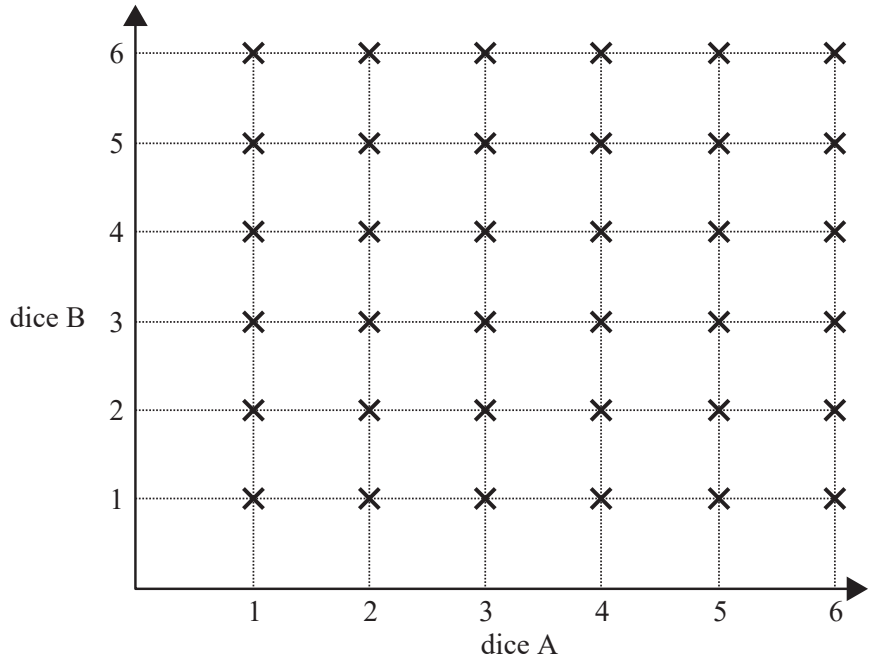
(b) Use the table below to calculate the estimate of the mean.

Time	Frequency
36 – 65	20
66 – 85	30
86 – 95	4

Answer (b) ..... [3]

20 Two dice are thrown.

The possibility space diagram shows the possible outcomes.



Find the probability that

(a) the number on die A is 3,

Answer (a) ..... [1]

(b) the numbers on both dice are prime,

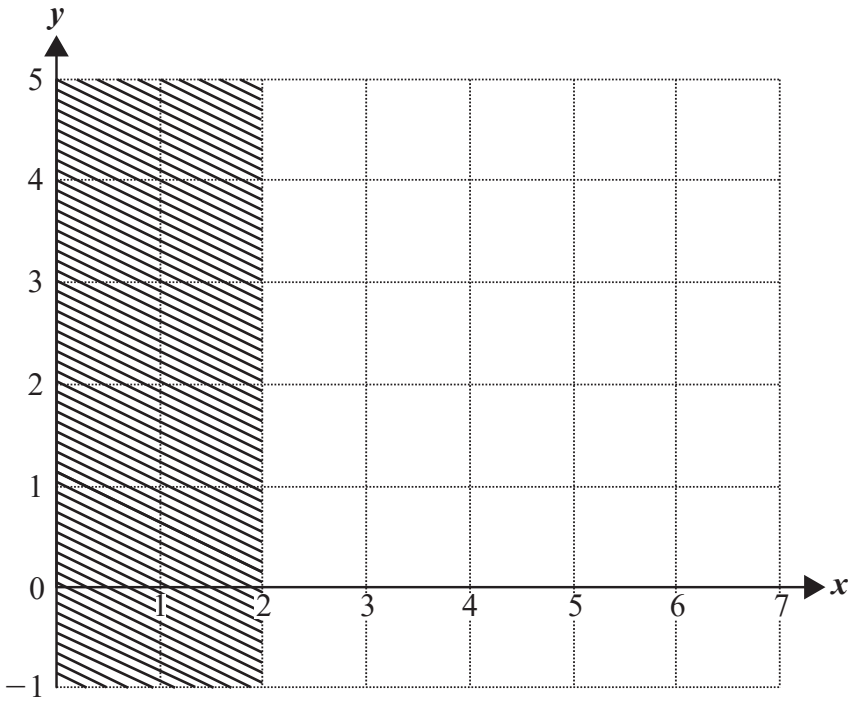
Answer (b) ..... [1]

(c) the product of the two numbers is 12.

Answer (c) ..... [1]

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The unshaded region represents $x \geq 2$.

On the same axes shade the **unwanted** regions to show the region satisfied by the inequalities

$x \geq 2$, $y - x > -2$, $7y + 5x \leq 35$.

[4]

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