

FOR OFFICIAL USE

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| | KU | RE |
| Total marks | | |

2500/404

NATIONAL
QUALIFICATIONS
2007

THURSDAY, 3 MAY
11.35 AM – 12.30 PM

MATHEMATICS
STANDARD GRADE
General Level
Paper 2

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

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Scottish candidate number

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Number of seat

- 1 You may use a calculator.**
- 2 Answer as many questions as you can.
- 3 Write your working and answers in the spaces provided. Additional space is provided at the end of this question-answer book for use if required. If you use this space, write clearly the number of the question involved.
- 4 Full credit will be given only where the solution contains appropriate working.
- 5 Before leaving the examination room you must give this book to the invigilator. If you do not you may lose all the marks for this paper.



FORMULAE LIST

Circumference of a circle: $C = \pi d$

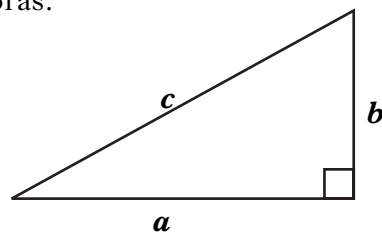
Area of a circle: $A = \pi r^2$

Curved surface area of a cylinder: $A = 2\pi r h$

Volume of a cylinder: $V = \pi r^2 h$

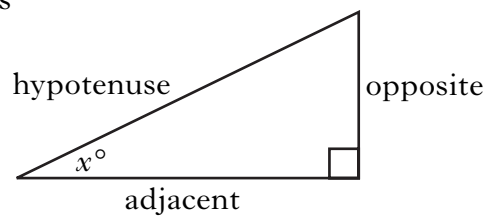
Volume of a triangular prism: $V = Ah$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

Trigonometric ratios
in a right angled
triangle:

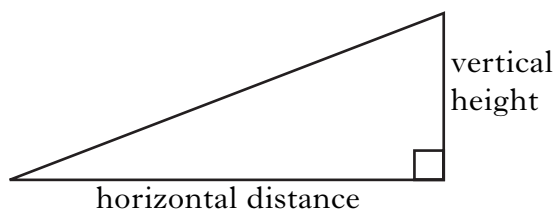


$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Gradient:



$$\text{Gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

Marks

| KU | RE |
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5. (a) Simplify

$$2(3x + 7) + 4(3 - x).$$

3

(b) Solve the inequality

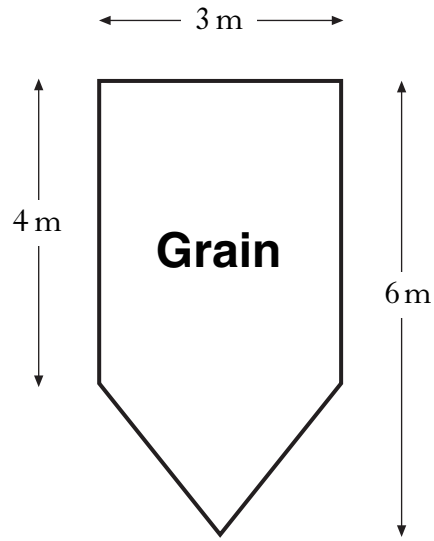
$$4a - 3 \geq 21.$$

2

[Turn over

10. The end face of a grain hopper is shown in the diagram.

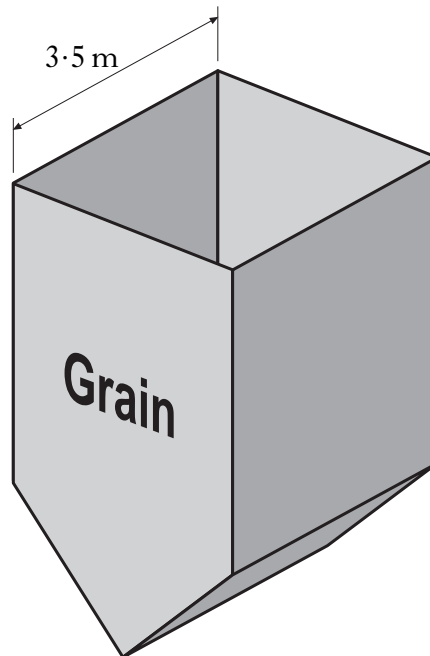
(a) Calculate the area of the end face.



Marks

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(b) The grain hopper is in the shape of a prism with a length of 3.5 metres. Find the volume of the hopper.



Marks

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12. The burning time, t minutes, of a candle varies directly as its height, h millimetres.

A candle with a height of 75 millimetres burns for 180 minutes.

(a) What is the burning time of a 40 millimetre candle?

3

(b) A candle burns for $2\frac{1}{2}$ hours.

What is the height of this candle?

3

[END OF QUESTION PAPER]

ADDITIONAL SPACE FOR ANSWERS

ADDITIONAL SPACE FOR ANSWERS