

HIGHER TIER
MINI PRACTICE EXAM 7

CALCULATOR ALLOWED
20 MINUTES ALLOWED



1.

Amelia is making cupcakes. She reads the instructions.

Ingredients

To make 12 cupcakes:

200g flour

250g sugar

220g butter

Amelia has 1.5 kilograms of flour, 2 kilograms of sugar and 1.75 kilograms of butter.
What is the maximum number of cupcakes she can make?

2.

A box is placed on a table.

The area of the box in contact with the table is $2,700 \text{ cm}^2$.

The pressure on the table is $4,000 \text{ N/m}^2$.

Find the force exerted by the box on the table.

(4)

3.

Show that $(x + 4)(x + 6)$ can be written in the form $(x + a)^2 + b$.

(3)

(3)

4.

ABC is a tangent to the circle.

Angle BFD = 51° .

Angle BDG = 98° .

Angle FBC = 70° .

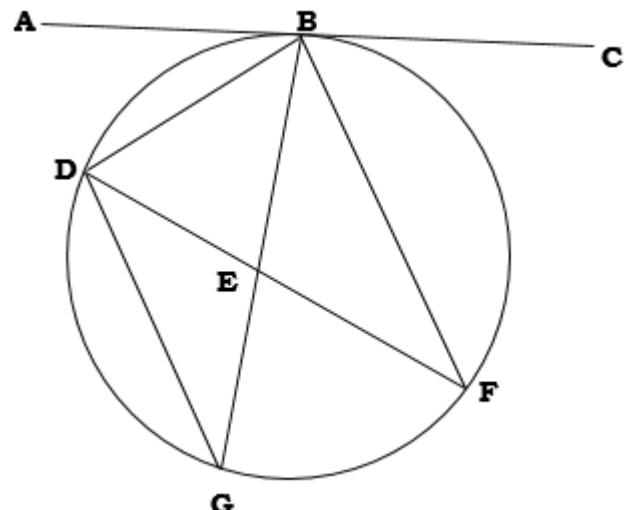
(a) Find the size of angle ABD.

(1)

(b) Find the size of angle DGB.

(1)

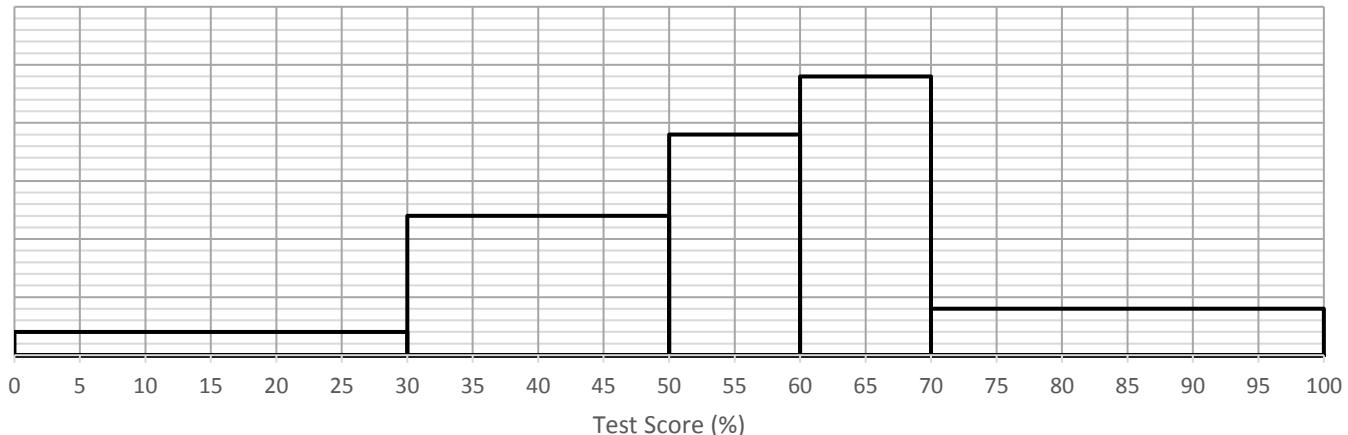
(c) Find the size of angle GEF.



5.

Every student in Year 10 took a maths exam.

The exam results are shown in the histogram below.



12 students scored more than 70%.

The pass mark for the exam was 45%.

Estimate how many students failed the exam.

(3)

(5)