

## Level 6 Daily Practice

Try these questions and then self mark them. Ask about those questions that you didn't understand. These should take **15** minutes to do the questions.

Sheet 4

## Level 6 Daily Practice

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You should be able to answer all the questions in this booklet in 15 minutes.

### Q1. Equation

Find the value of  $x$

$$6 + 2x = x - 6$$

حل المسألة

$$x = \dots\dots\dots$$

2 marks

### Q2. Darts

Gita threw three darts.

Use the information in the box to work out what numbers she threw.

The lowest number was 10  
The range was 10  
The mean was 15

حل المسألة  
Gita's numbers were ..... , ..... and .....

1 mark

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### Q3. Conversion

A cookery book shows this conversion table.

Mass in ounces	Mass in grams
1	25
2	50
3	75
4	110
5	150
10	275

Use the table to explain how you can tell the conversions **cannot all be exact**.



1 mark

### Q4. Counters in a bag

In a bag, there are only red, white and yellow counters.

I am going to take a counter out of the bag at random.

The probability that it will be **red** is **more than**  $\frac{1}{4}$   
It is **twice as likely** to be **white** as **red**.

Give an example of how many counters of each colour there could be.

Write numbers in the sentence below.



There could be ..... red, ..... white and ..... yellow counters.

2 marks

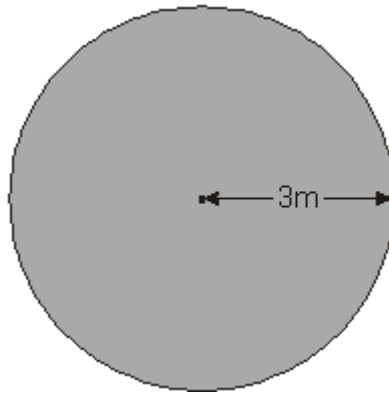
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### Q5. Lawn

The diagram shows a plan of Luke's new lawn.

The lawn is a circle with radius 3m.



Work out the area of the lawn.



..... m<sup>2</sup>

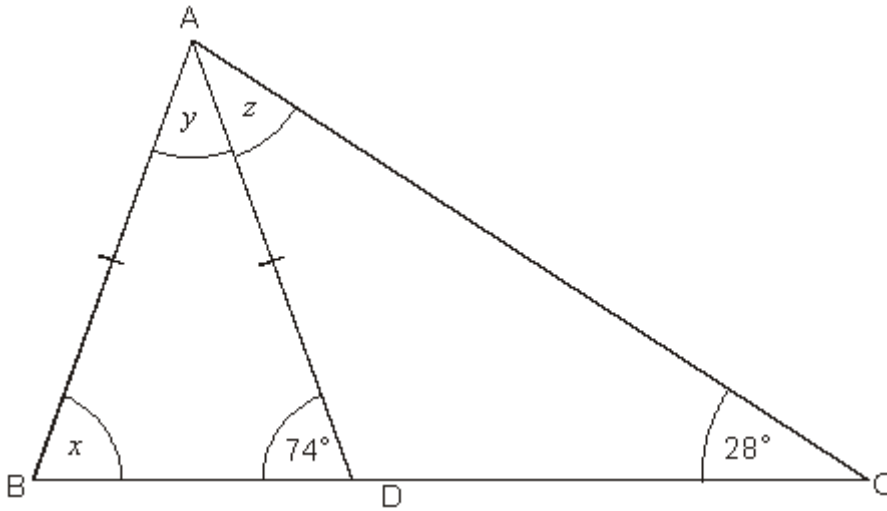
2 marks

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## Q6. Isosceles triangle

Look at triangle ABC.

ABD is an **isosceles** triangle where  $AB = AD$ .



Not drawn accurately

Work out the sizes of angles  $x$ ,  $y$  and  $z$

Give reasons for your answers.

$x = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$

$y = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$

$z = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$

2 marks

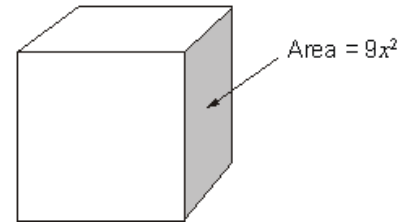
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### Q7. Cube

Look at the cube.

The area of a **face** of the cube is  $9x^2$



Write an expression for the **total surface area** of the cube.

Write your answer as simply as possible.

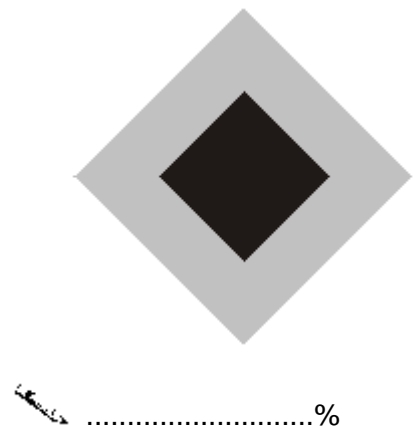
.....

1 mark

### Q8. Grey and black designs

(a) In this design, the ratio of **grey to black** is **3 : 1**

What **percentage** of the design is black?



1 mark

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(b) In this design, **60%** is **grey** and the rest is black.

What is the ratio of **grey to black**?

Write your ratio in its simplest form.

*Handwritten mark*



..... : .....

2 marks

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M1. -12

2

[2]

M2. Gives all three correct numbers, ie

10, 15 and 20 [any order]

[1]

M3. Gives a correct explanation

**Do not accept explanation does not use the values in the given table**

eg

- 1 ounce is more like 28g
- They only use 25g as roughly equal, so those values are not accurate

**! Explanation states or implies what values 'should be' or that the table is 'incorrect'**

Condone

The most common correct explanations:

Show the values in grams do not consistently go up/down in steps of 25 per ounce

eg

- It goes up in 25s until the step from 3 to 4 ounces when it suddenly goes up 35
- It should go from 150g down to 125g, but it's 110g instead

**Accept minimally acceptable explanation**

eg

- It goes up in 25s at first but then changes
- It goes up 25, 25, 35, 40 and so it is not a steady pattern
- It should go 25, 50, 75, 100
- The numbers should go up by the same amount each time

**Accept incomplete explanation**

eg

- 25, 25, 35, 40
- 4 ounces should be 100g and 10 ounces should be 250g
- They don't go up in proportion

Show that the relationship between two values in grams is not what other values would predict

eg

- If 1 ounce is 25g, then 4 ounces should be  $25 \times 4 = 100$ g not 110g
- If 5 ounces is 150g, then 10 ounces should be  $150 \times 2 = 300$ g not 275g
- 10 ounces in grams should be  $25 \times 10 = 250$ , but it is 275 in the table
- $50 \div 2 = 25$ , but  $150 \div 5 = 30$

**Accept minimally acceptable explanation**

eg

- $25 \times 4 \neq 110$
- 4 should be  $25 \times 4 = 100$
- $150 \times 2 \neq 275$
- If 5 is 150, then 10 should be 300
- $50 \div 2 \neq 150 \div 5$
- 10oz should equal double 5oz but it doesn't



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- M4.** Completes the sentence correctly with three positive integers  $r$ ,  $w$  then  $y$ , such that  $w = 2r$  and  $y < r$   
eg
- 2, 4 then 1
  - 3, 6 then 1 or 2
  - 4, 8 then 1, 2 or 3

2

- M5.** 28.(...) or  $9\pi$

2

- M6.** Gives  $x = 74$ ,  $y = 32$  and  $z = 46$   
and  
gives a correct reason for each angle

The most common correct reasons:

For angle  $x$ , refer to the isosceles triangle

eg

- It is an isosceles triangle, so it is equal to angle ADB
- The triangle is isosceles so it is the same as the  $74^\circ$  angle marked

**Accept minimally acceptable reason**

eg

- *Isosceles*

**Do not accept incomplete reason without the correct geometrical property identified**

eg

- *It is equal to angle ADB*
- *It is the same as the  $74^\circ$  angle marked*

For angle  $y$ , refer to angles in a triangle

eg

- Angles in a triangle, so  $180 - 74 - 74$
- $74 + 74 = 148$  and  $180 - 148$  because they add up to 180 in a triangle

**Accept minimally acceptable reason**

eg

- *Angles in a triangle*

**! Follow-through from their  $x$**

*For angle  $y$ , accept 106 – their  $x$  accompanied by a correct reason*

**Do not accept incomplete reason without the correct geometrical property identified**

eg

- *$180 - 74 - 74$*
- *$74 + 74 = 148$  and  $180 - 148$*

For angle  $z$ , refer to angles in a triangle and angles on a straight line  
or just angles in a triangle or exterior angle of a triangle

eg

- Angles in a triangle,  $180 - 28 - 74 - 32$
- Angles on a straight line,  $180 - 74 = 106$ , angles in a triangle,  $180 - 106 - 28$
- Exterior angle of a triangle,  $74 - 28$

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**Accept minimally acceptable reason**

eg

- Angles in a triangle
- Angles on a straight line and angles in a triangle
- Exterior angle of a triangle

**Do not accept incomplete reason without the correct geometrical property identified**

eg

- $180 - 28 - 74 - 32$
- $180 - 74 = 106, 180 - 106 - 28$

2

M7.  $54x^2$

**Do not accept: unsimplified expression or unconventional notation**

eg

- $9x^2 \times 6$
- $9x^2 + 9x^2 + 9x^2 + 9x^2 + 9x^2 + 9x^2$
- $54xx$

[1]

M8. (a) 25

**Do not accept: equivalent fractions or decimals**

1

(b) 3 : 2

**Do not accept: for 2m, correct ratio given in the form  $n : 1$  or  $1 : n$**

eg

- $1.5 : 1$
- $1 : \frac{2}{3}$

2