

# Silver Level

## Question Paper 14

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Silver
Booklet	Question Paper 14

**Time Allowed:** 58 minutes

**Score:** /48

**Percentage:** /100

**Grade Boundaries:**

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	<20%

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1 (a) Factorise  $c^2 - 5c$

.....  
(2)

(b) Simplify  $d^5 \times d^7$

.....  
(1)

(c) Factorise  $x^2 + x - 30$

.....  
(2)

(d) Make  $b$  the subject of  $P = \frac{1}{2}ab^2$

$b =$  .....  
(2)

(e) Solve  $\frac{2x+1}{3} + \frac{x-5}{2} = 4$

Show clear algebraic working.

$x =$  .....  
(4)

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(Total for Question 1 is 11 marks)

2 (a) Write 0.000076 in standard form.

.....  
(1)

The area covered by the Pacific Ocean is  $1.6 \times 10^8 \text{ km}^2$

The area covered by the Arctic Ocean is  $1.4 \times 10^7 \text{ km}^2$

(b) Write  $1.6 \times 10^8$  as an ordinary number.

.....  
(1)

The area covered by the Pacific Ocean is  $k$  times the area covered by the Arctic Ocean.

(c) Find, correct to the nearest integer, the value of  $k$ .

$k =$  .....  
(2)

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**(Total for Question 2 is 4 marks)**

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3 The wheel of the Singapore Flyer is a circle with a diameter of 150 metres.

- (a) Calculate the circumference of the wheel.  
Give your answer correct to the nearest metre.



..... metres  
(2)

The wheel takes 30 minutes to rotate once.

- (b) Work out the average speed of a point on the circumference of the wheel as it rotates once.  
Give your answer in metres per second correct to 3 significant figures.

..... metres per second  
(3)

The diagram shows a giant wheel above horizontal ground.

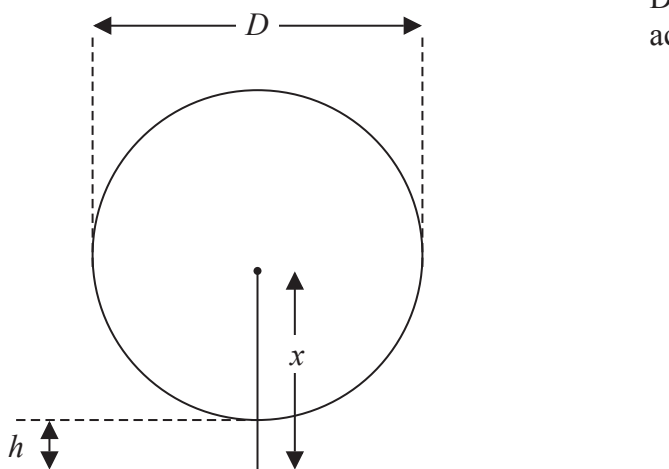


Diagram **NOT** accurately drawn

The wheel is a circle of diameter  $D$  metres.  
The lowest point of the wheel is  $h$  metres above the ground.  
The centre of the wheel is  $x$  metres above the ground.

(c) Express  $h$  in terms of  $D$  and  $x$

.....  
(2)

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**(Total for Question 3 is 7 marks)**

4

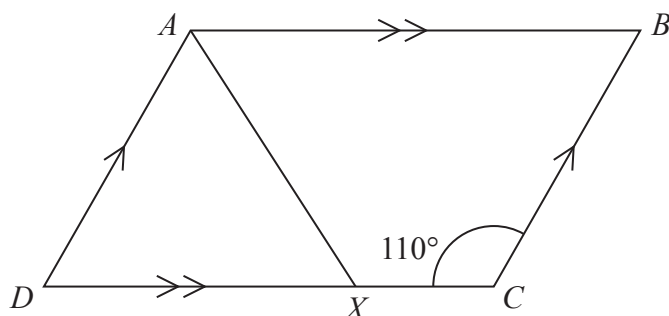


Diagram **NOT** accurately drawn

$ABCD$  is a parallelogram.

Angle  $DCB = 110^\circ$

$X$  is the point on  $DC$  such that  $AX$  bisects the angle  $DAB$ .

Calculate the size of angle  $AXC$ .

o

.....

---

(Total for Question 4 is 4 marks)

5 Solve  $x + 2y = 3$   
 $x - y = 6$

Show clear algebraic working.

$x = \dots\dots\dots$

$y = \dots\dots\dots$

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**(Total for Question 5 is 3 marks)**

6 Here are some rows of a number pattern.

Row number	Column 1	Column 2	Column 3
1	$1 \times 3 + 1$	4	$2^2$
2	$2 \times 4 + 1$	9	$3^2$
3	$3 \times 5 + 1$	16	$4^2$
⋮			
		676	
⋮			
$n$			

(a) Write down the Row number of the row that has 676 in Column 2

.....  
(1)

(b) For Row number  $n$ ,

(i) write down an expression, in terms of  $n$ , that should go in Column 1

.....

(ii) write down an expression, in terms of  $n$ , that should go in Column 3

.....  
(2)

**(Total for Question 6 is 3 marks)**



- 7 The table gives information about the number of vehicles passing a point on a road in each of 70 intervals of equal length.

Number of vehicles	Frequency
1 to 5	8
6 to 10	10
11 to 15	18
16 to 20	20
21 to 25	10
26 to 30	4

- (a) Write down the modal class interval.

.....  
(1)

- (b) Calculate an estimate for the mean.

.....  
(4)

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**(Total for Question 7 is 5 marks)**

8 Here is a trapezium  $ABCD$ .

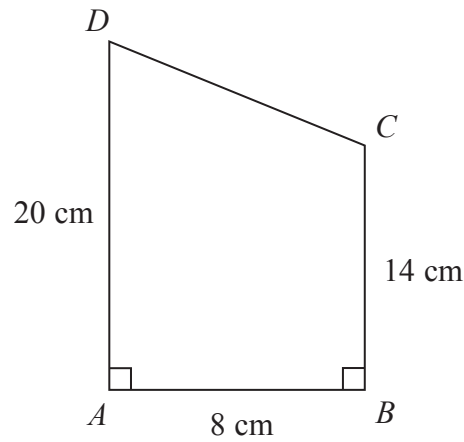


Diagram **NOT** accurately drawn

Angle  $DAB = \text{angle } ABC = 90^\circ$

$AD = 20 \text{ cm}$

$AB = 8 \text{ cm}$

$BC = 14 \text{ cm}$

(a) Calculate the area of the trapezium  $ABCD$ .

.....  $\text{cm}^2$   
(2)

(b) Calculate the length of  $CD$ .

.....  $\text{cm}$   
(4)

(Total for Question 8 is 6 marks)

- 9 (a) Write 224 as a product of powers of its prime factors.  
Show your working clearly.

.....  
(3)

- (b) Write down 3 **different** factors of 224 with a sum between 99 and 110

.....  
(2)

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**(Total for Question 9 is 5 marks)**

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