Area of a Rhombus - Worksheet
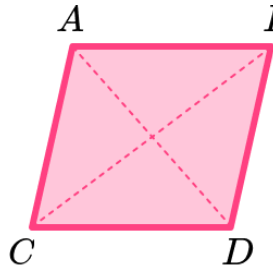
Skill

Group A - Calculating area given the lengths of diagonals
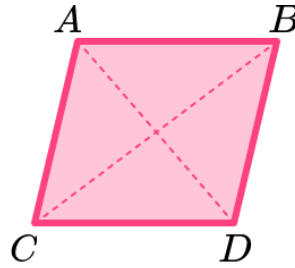
Calculate the areas of the rhombuses below.
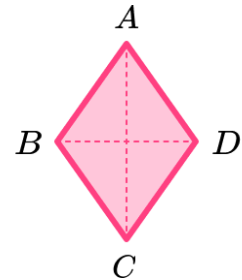
1)

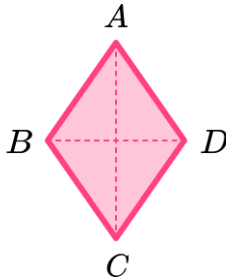$AD = 6m, \ BC = 10m$
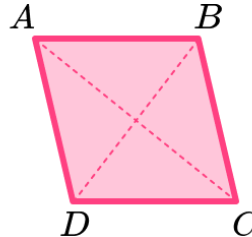
2)

$AD = 15m, \ BC = 22m$

3)

$AC = 7.5m, \ BD = 5.2m$

4)

$AC = 500cm, \ BD = 3m$
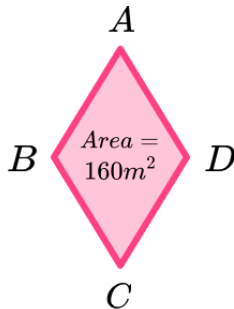
5)

$AC = 12.5cm, \ BD = 950cm$

6) What is the area of a rhombus whose diagonals measure $8.9cm$ and $103mm$?

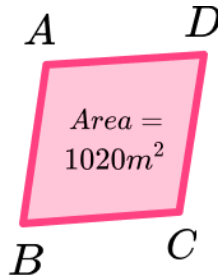### Group B - Calculating the length of the diagonals

Calculate the length of the diagonal in each of the rhombuses below:

1)

$Area = 160m^2$

$AC = 20m, \ Find \ BD$

2)

$Area = 1020m^2$

$AC = 50m, \ Find \ BD$

3)

$Area = 45.24m^2$

$AC = 10.4m, \ Find \ BD$

4)

$Area = 246m^2$
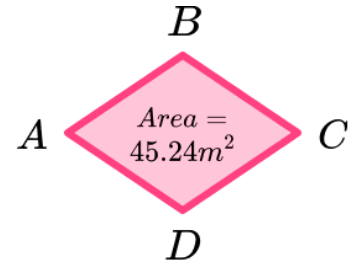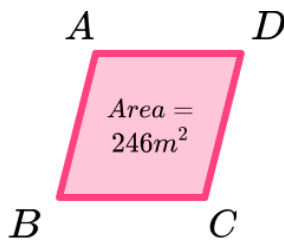
$BD = 2400cm, Find \ AC$

5)

$Area = 3.5m^2$
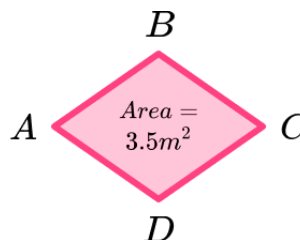
$AC = 5000mm, \ Find \ BD$

6) The area of a rhombus is $7.5m^2$. One of the diagonals measures $5000mm$. Find the length of the other diagonal.

Area of a Rhombus - Worksheet

Group C - Calculating area given the side length

Calculate the area in each of the rhombuses below:

1) In the rhombus below $AB = 25, AC = 14m$. Find the area of the rhombus.

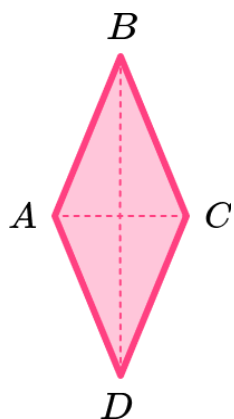**2)** In the rhombus below $AB = 41m, AC = 18m$. Find the area of the rhombus.

3) In the rhombus below $AB = 40cm, DB = 64cm$. Find the area of the rhombus.

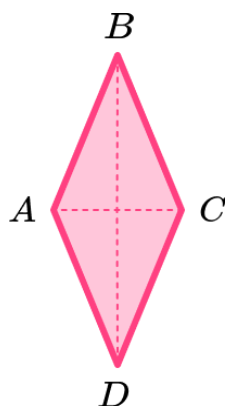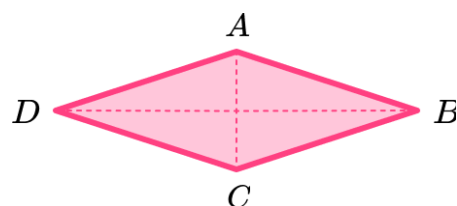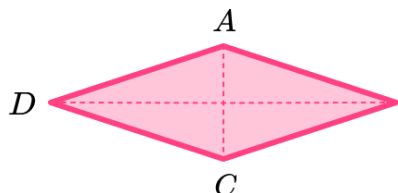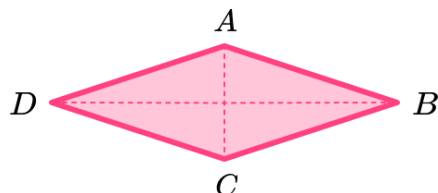**4)** In the rhombus below $AB = 101m, DB = 198m$. Find the area of the rhombus.

5) In the rhombus below $AB = 85m, DB = 16800cm$. Find the area of the rhombus.
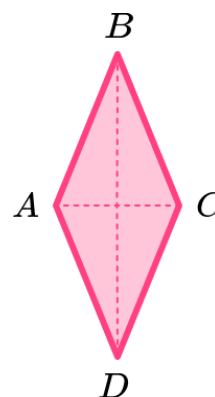

6) In the rhombus below $AB = 29m, AC = 42000mm$. Find the area of the rhombus.

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Area of a Rhombus - Worksheet

Applied

1) **(a)** Sketch 2 different rhombuses with an area of $24cm^2$.

   (b) Sketch 2 different rhombuses with an area of $10cm^2$.

2) **(a)** Mrs. Brown is planning on tiling her bathroom floor which is shown below. Each square tile can be cut into any shape needed and measures $10cm$ by $10cm$. How many tiles are needed to cover the bathroom floor?

$$AC = 6m, \ BD = 9m$$
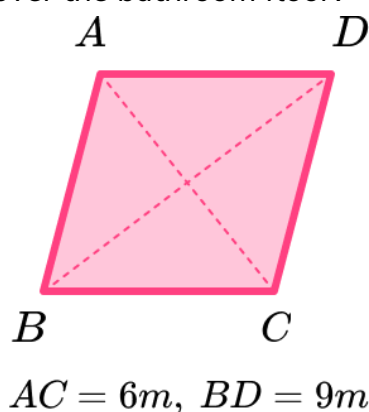
   (b) If each tile costs $60p$, how much would it cost to tile the entire bathroom floor?

3) **(a)** In the rhombus below $AB \ = \ 25m, DB \ = \ 48m$. What is the perimeter of the rhombus?
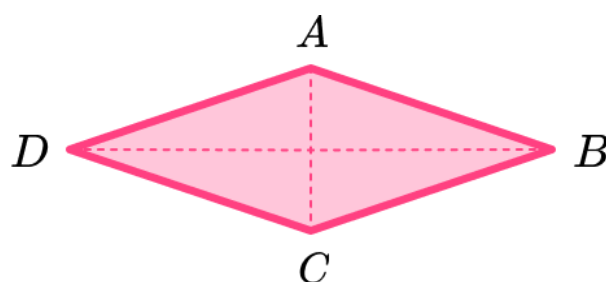
   (b) What is the area of the rhombus?

4) **(a)** Work out the area of the compound shape.
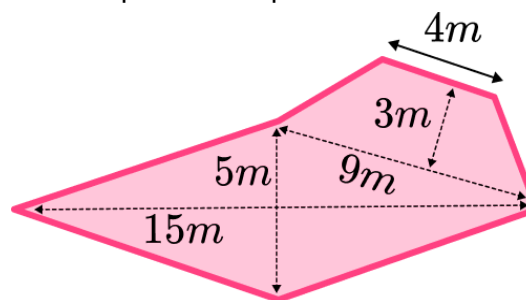
Area of a Rhombus - Exam Questions

1) **(a)** Shown on the right is a rhombus. Work out the area of the rhombus.

A

D — B

C

$AC = 13m,\ DB = 15m$

Diagram not drawn to scale.

....
(2)

(b) What is the area of the rhombus in square centimetres?
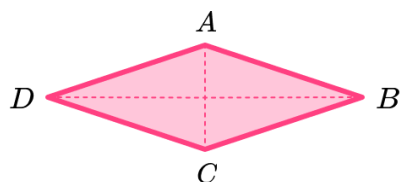
....
(2)
(4 marks)

2) **(a)** Mr. Perry owns a farm and is looking to make the cattle enclosure shown below. Each cattle needs 5 square metres to move around freely. What is the maximum number of cattle that can fit into the enclosure?

A D

B C

$AC = 19m,\ BD = 23m$

....
(4)

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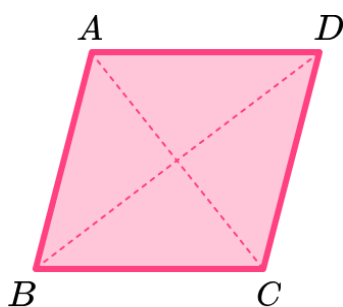
4

Area of a Rhombus - Exam Questions

(b) Each cattle costs £450 to acquire. How much would it cost to buy all the cattle that can fit?

....
(2)
(6 marks)
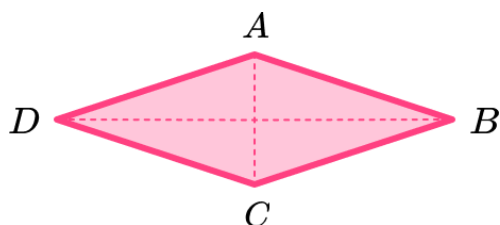
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3) **(a)** In the rhombus below, AC = 10m and DB = 12m. Find the area of the rhombus.

....
(2)

(b) Work out the perimeter of the rhombus.

....
(3)
(5 marks)

Area of a Rhombus - Exam Questions

4) Work out the area of the shaded region in the diagram.

$BD = 3m$ and $AC = 6m$.

....

(3 marks)

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6

THIRD SPACE
LEARNING
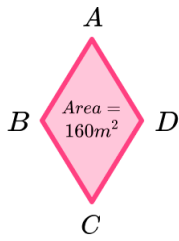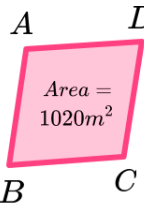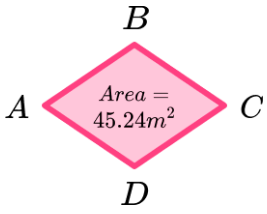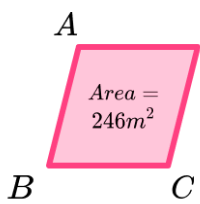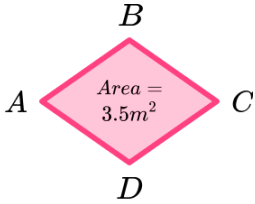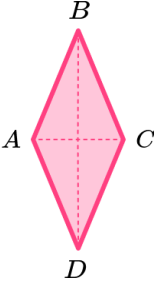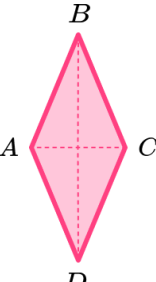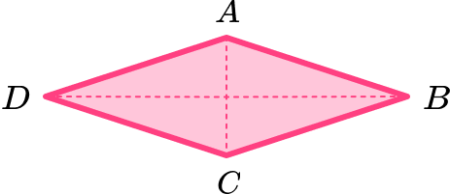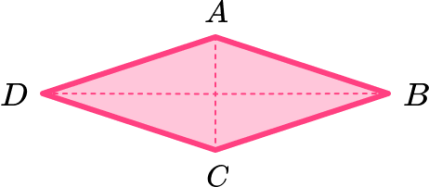
Area of a Rhombus - Answers

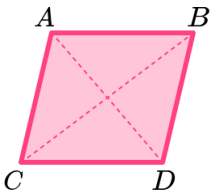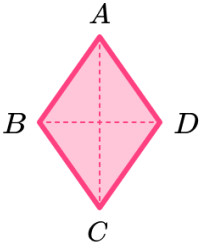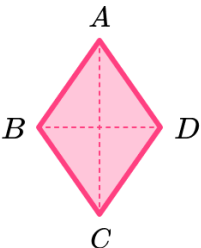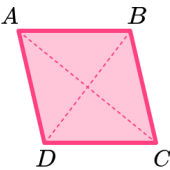|	Question	Answer
	Skill Questions	
Group A	Calculate the areas of the rhombuses below.	
	1) $AD = 6m, \ BC = 10m$	**1)** $30m^2$
	2) $AD = 15m, \ BC = 22m$	**2)** $165m^2$
	3) $AC = 7.5m, \ BD = 5.2m$	**3)** $19.5m^2$
	4) $AC = 500cm, \ BD = 3m$	**4)** $7.5m^2$ or $75\,000cm^2$
	5) $AC = 12.5cm, \ BD = 950cm$	**5)** $59.375m^2$ or $5\,937.5cm^2$
	6) What is the area of a rhombus whose diagonals measure $8.9cm$ and $103mm$?	**6)** $45.835cm^2$ or $4\,583.5mm^2$

Area of a Rhombus - Answers

Group B	Calculate the length of the diagonal in each of the rhombuses below.	
	1) A B Area = $160m^2$ D C $AC = 20m,\ Find\ BD$	**1)** $16m$
	2) A D Area = $1020m^2$ B C $AC = 50m,\ Find\ BD$	**2)** $40.8m$
	3) B A Area = $45.24m^2$ C D $AC = 10.4m,\ Find\ BD$	**3)** $8.7m$
	4) A D Area = $246m^2$ B C $BD = 2400cm,\ Find\ AC$	**4)** $20.5m$
	5) B A Area = $3.5m^2$ C D $AC = 5000mm,\ Find\ BD$	**5)** $1.4m$
	6) The area of a rhombus is $7.5m^2$. One of the diagonals measures $5000mm$. Find the length of the other diagonal.	**6)** $3m$

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Area of a Rhombus - Answers

Group C	Calculate the areas of the rhombuses below.	
	1) In the rhombus below $AB = 25, AC = 14m$. Find the area of the rhombus.	**1)** $336m^2$
	2) In the rhombus below $AB = 41m$, $AC = 18m$. Find the area of the rhombus.	**2)** $720m^2$
	3) In the rhombus below $AB = 40cm$, $DB = 64cm$. Find the area of the rhombus.	**3)** $1536cm^2$
	4) In the rhombus below $AB = 101m$, $DB = 198m$. Find the area of the rhombus.	**4)** $3960m^2$

Area of a Rhombus - Answers

Group C contd	5) In the rhombus below $AB = 85m$, $DB = 16800cm$. Find the area of the rhombus. $$\begin{array}{c} A \\ D \longleftrightarrow B \\ C \end{array}$$	5) $2184m^2$
	6) In the rhombus below $AB = 29m$, $AC = 42000mm$. Find the area of the rhombus. $$\begin{array}{c} B \\ A \longleftrightarrow C \\ D \end{array}$$	6) $840m^2$

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Area of a Rhombus - Answers

		Question	Answer
		Applied Questions	
1)	**a)**	Sketch 2 different rhombuses with an area of $24cm^2$	**a)** Possible solutions: $d_1 = 6cm, \ d_2 = 8cm;$ $d_1 = 4cm, \ d_2 = 12cm$
	b)	Sketch 2 different rhombuses with an area of $10cm^2$	**b)** Possible solutions: $d_1 = 5cm, \ d_2 = 4cm;$ $d_1 = 10cm, \ d_2 = 2cm$
2)	**a)**	Mrs. Brown is planning on tiling her bathroom floor which is shown below. Each square tile can be cut into any shape needed and measures $10cm$ by $10cm$. How many tiles are needed to cover the bathroom floor? A D B C $AC = 6m, \ BD = 9m$	**a)** She will need 2700 tiles to tile her bathroom floor.
	b)	If each tile costs $60p$, how much would it cost to tile the entire bathroom floor?	**b)** £1620
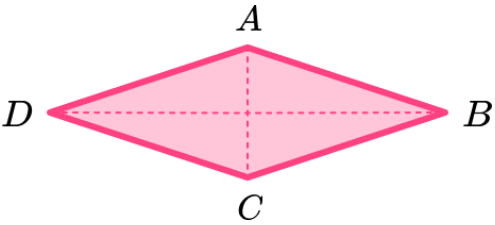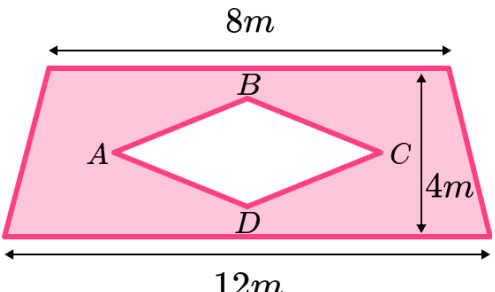
3)	In the rhombus below $AB = 25m$ and $DB = 48m$. **a)** What is the perimeter of the rhombus? **b)** What is the area of the rhombus?	**a)** $P = 100m$ **b)** $Area = 336m^2$
4)	Work out the area of the compound shape.	$Area = 57m^2$

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Area of a Rhombus - Mark Scheme

	Question	Answer	
	Exam Questions		
1) (a)	Shown on the right is a rhombus. A D ◄————► B C $AC = 13m, \ DB = 15m$ Diagram not drawn to scale. Work out the area of the rhombus.	**(a)** $\frac{13 \times 15}{2}$ **oe** $97.5m^2$	**(1)** **(1)**
(b)	What is the area of the rhombus in square centimetres?	**(b)** $97.5 \times 100^{\,2}$ $975\,000 cm^2$	**(1)** **(1)**
2) (a)	Mr. Perry owns a farm and is looking to make the cattle enclosure shown below. Each cattle needs 5 square metres to move around freely. What is the maximum number of cattle that can fit into the enclosure? A D B C $AC = 19m, \ BD = 23m$	**(a)** $\frac{19 \times 23}{2}$ **oe** 218.5 **oe** $218.5 \div 5$ **or** 43.7 43 cattle	**(1)** **(1)** **(1)** **(1)**
(b)	Each cattle costs £450 to acquire. How much would it cost to buy all the cattle that can fit?	**(b)** 450×43 £19 350	**(1)** **(1)**

Area of a Rhombus - Mark Scheme

3) (a)	In the rhombus on the right $AC = 10m, DB = 12m.$ Find the area of the rhombus.	(a) $\frac{10 \times 12}{2}$ **oe**	(1)
		$60m^2$	(1)
(b)	Work out the perimeter of the rhombus.	(b) $\sqrt{5^2 + 6^2}$ **or** $\sqrt{61}$ **oe**	(1)
		7.81×4	(1)
		$4\sqrt{61}\ m$ **or** $31.24\ m$	(1)
4)	Work out the area of the shaded region in the diagram on the right. $BD = 3cm$ and $AC = 6cm.$	$\frac{12+8}{2} \times 4 = 40$	(1)
		$\frac{3+6}{2} = 9$	(1)
		$40 - 9$	(1)
		$31m^2$	(1)