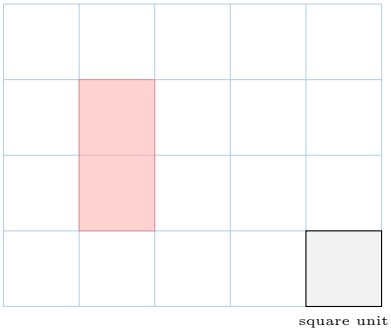
AREA UNITS

A AREA

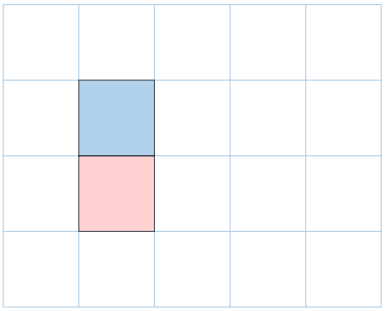
A.1 FINDING AREA OF A SHAPE

Ex 1: What is the area of the red figure?



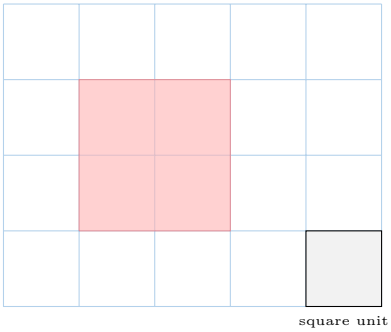
2 square units

Answer: To find the area, we count the number of unit squares inside the shape.



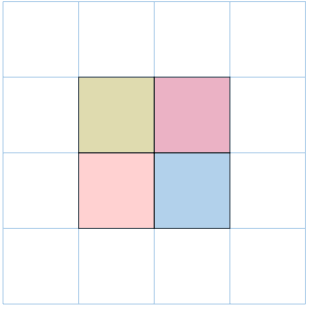
The area is 2 square units.

Ex 2: What is the area of the red figure?



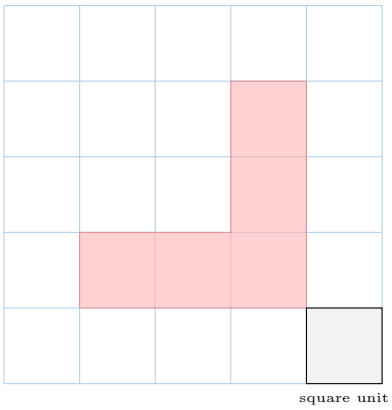
4 square units

Answer: To find the area, we count the number of unit squares inside the shape.



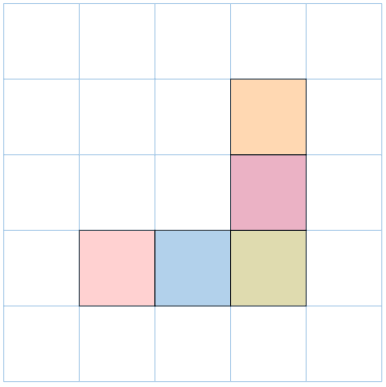
The area is 4 square units.

Ex 3: What is the area of the red figure?



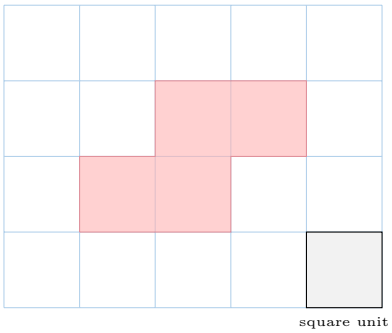
5 square units

Answer: To find the area, we count the number of unit squares inside the shape.



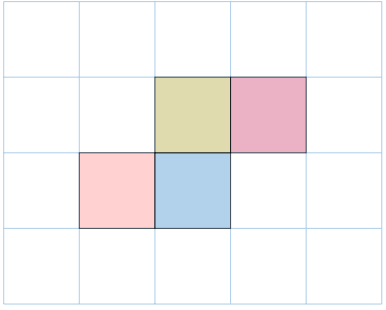
The area is 5 square units.

Ex 4: What is the area of the red figure?



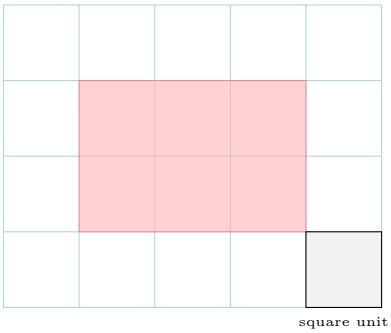
4 square units

Answer: To find the area, we count the number of unit squares inside the shape.



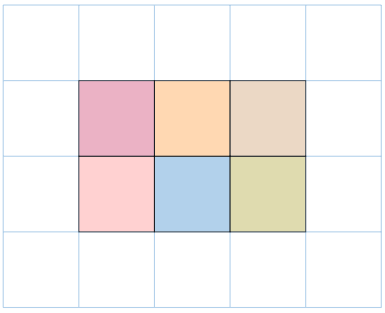
The area is 4 square units.

Ex 5: What is the area of the red figure?



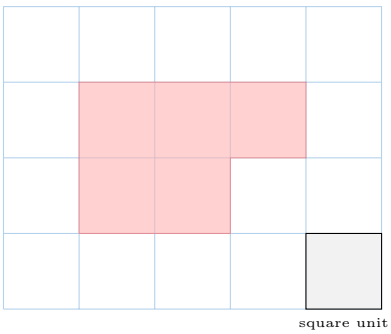
6 square units

Answer: To find the area, we count the number of unit squares inside the shape.



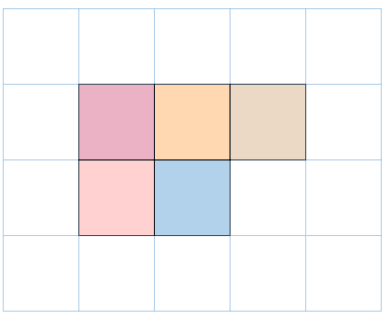
The area is 6 square units.

Ex 6: What is the area of the red figure?



5 square units

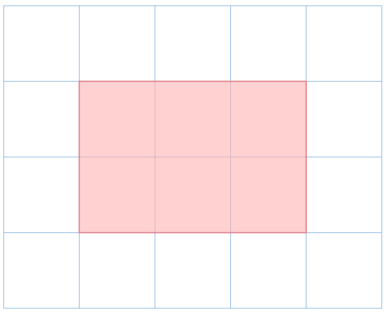
Answer: To find the area, we count the number of unit squares inside the shape.



The area is 5 square units.

A.2 BUILDING FORMULAS

MCQ 7: What is the area of the red rectangle?



Choose the 4 correct answers:

☒ $2+2+2$

☒ $3+3$

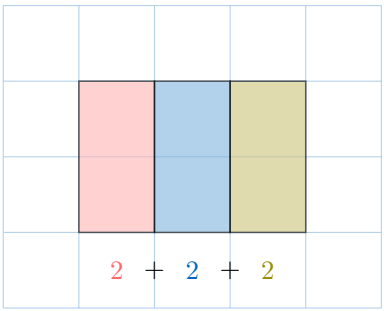
☐ $3+2+3+2$

☒ 2×3

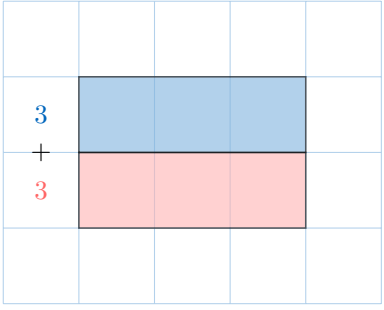
☒ 3×2

Answer:

- We can count the squares like that:

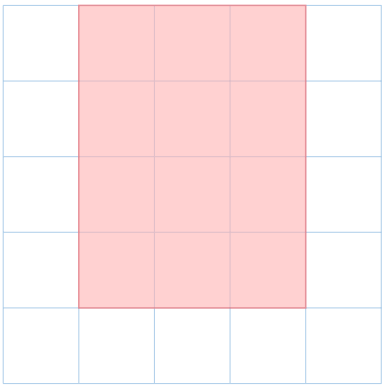


- $2+2+2=3\times 2$.
- We can also count like that



- $3+3=2\times 3$.

MCQ 8: What is the area of the red rectangle?



Choose 4 correct answers:

☐ $3+4+3+4$

☒ $4+4+4$

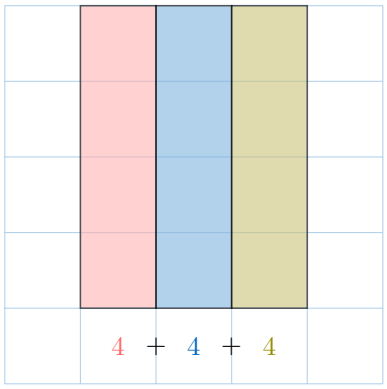
☒ $3+3+3+3$

☒ 4×3

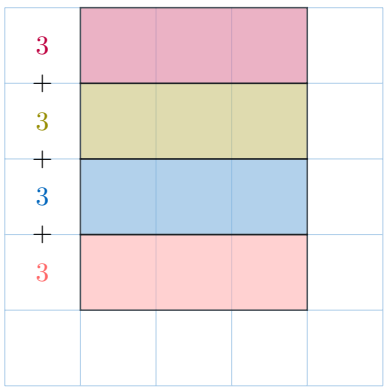
☒ 3×4

Answer:

- We can count the squares like that:

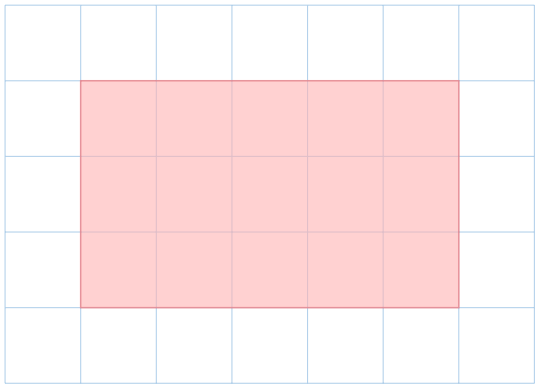


- $4+4+4=3\times 4$.
- We can also count like that:



- $3+3+3+3=4\times 3$.

MCQ 9: What is the area of the red rectangle?



Choose the 4 correct answers:

☒ $3+3+3+3+3$

☒ $5+5+5$

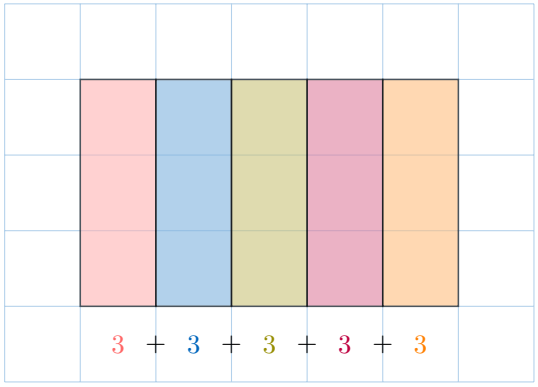
☐ $5+3+5+3$

☒ 3×5

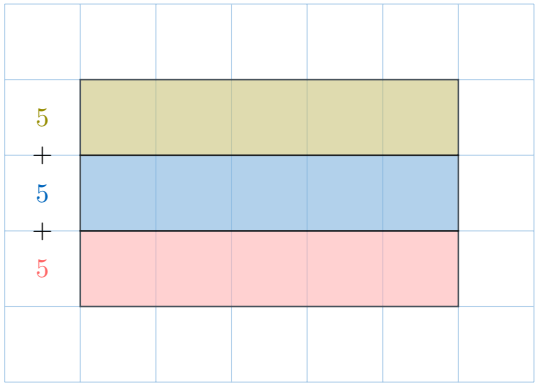
☒ 5×3

Answer:

- We can count the squares like that:



- $3+3+3+3+3=5\times 3$.
- We can also count like that:

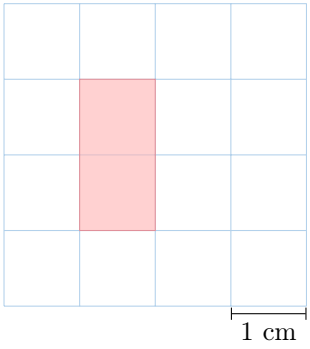


- $5+5+5=3\times 5$.

B UNITS OF AREA

B.1 FINDING AREA OF A SHAPE

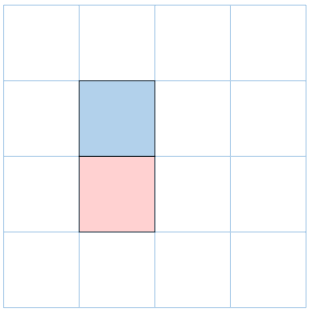
Ex 10: What is the area of the red figure?



2 **cm²**

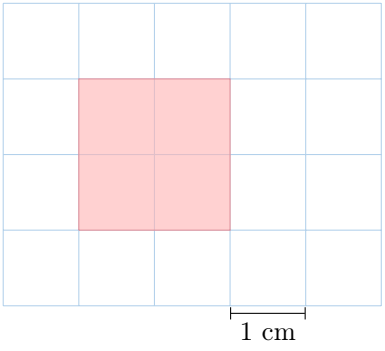
Answer:

- The unit of area is cm^2.
- To find the area, we count the number of square centimeters inside the shape.



The area is 2 cm^2.

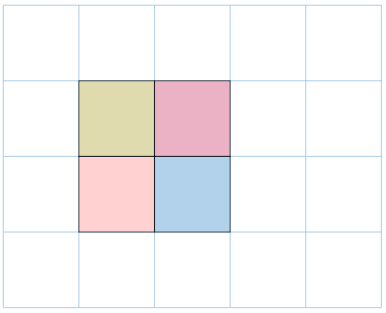
Ex 11: What is the area of the red figure?



4 **cm²**

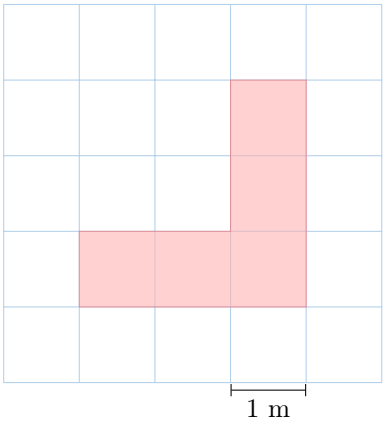
Answer:

- The unit of area is cm^2.
- To find the area, we count the number of square centimeters inside the shape.



The area is 4 cm^2.

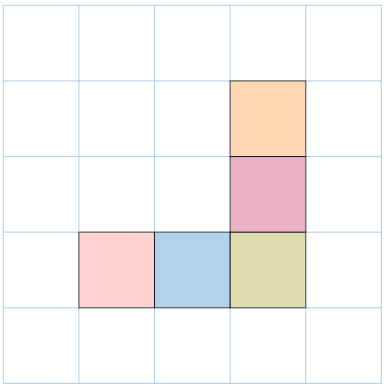
Ex 12: What is the area of the red figure?



5 **m²**

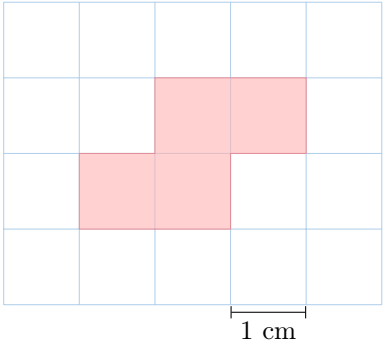
Answer:

- The unit of area is m^2.
- To find the area, we count the number of square meters inside the shape.



The area is 5 m^2.

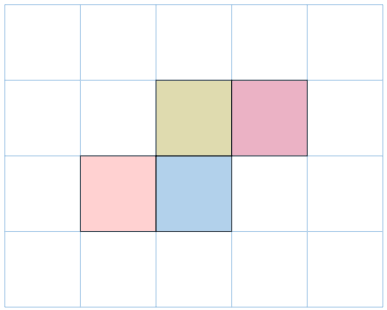
Ex 13: What is the area of the red figure?



4 **cm²**

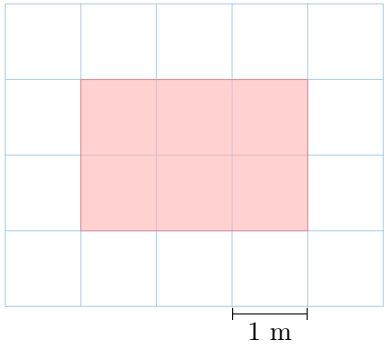
Answer:

- The unit of area is cm^2.
- To find the area, we count the number of square centimeters inside the shape.



The area is 4 cm^2.

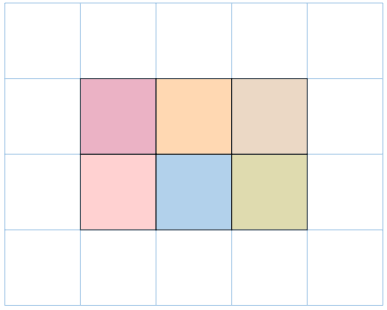
Ex 14: What is the area of the red figure?



6 **m²**

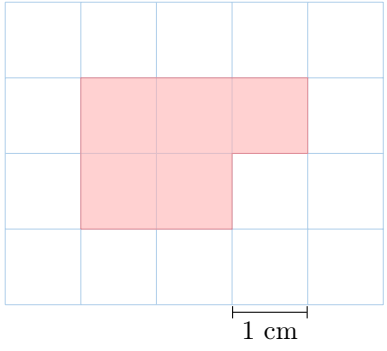
Answer:

- The unit of area is m^2.
- To find the area, we count the number of square meters inside the shape.



The area is 6 m^2.

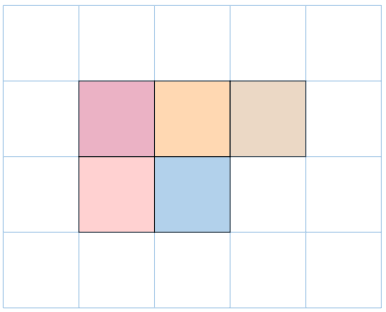
Ex 15: What is the area of the red figure?



5 **cm²**

Answer:

- The unit of area is cm^2.
- To find the area, we count the number of square centimeters inside the shape.



The area is 5 cm^2.

B.2 CHOOSING UNITS FOR AREA

MCQ 16: What unit will be used to measure the area of your bedroom?

Choose 1 answer:

- ☐ Square millimeters
- ☐ Square centimeters
- ☒ Square meters
- ☐ Square kilometers

Answer: Square meters will be used to measure the area of your bedroom because it's a larger unit, perfect for measuring bigger spaces like a room, but not as large as a square kilometer or as small as a square centimeter or square millimeter.

MCQ 17: What unit will be used to measure the area of a piece of paper?

Choose 1 answer:

- ☐ Square millimeters
- ☒ Square centimeters
- ☐ Square meters
- ☐ Square kilometers

Answer: Square centimeters will be used to measure the area of a piece of paper because it's a smaller unit, perfect for measuring smaller spaces like a sheet of paper, but not as small as a square millimeter or as large as a square meter or square kilometer.

MCQ 18: What unit will be used to measure the area of a country?

Choose 1 answer:

- ☐ Square millimeters
- ☐ Square centimeters
- ☐ Square meters

☒ Square kilometers

Answer: Square kilometers will be used to measure the area of a country because it's a very large unit, perfect for measuring huge spaces like a country, while square meters, square centimeters, and square millimeters are too small.

MCQ 19: What unit will be used to measure the area of a playground?

Choose 1 answer:

☐ Square millimeters

☐ Square centimeters

☒ Square meters

☐ Square kilometers

Answer: Square meters will be used to measure the area of a playground because it's a larger unit, perfect for measuring bigger spaces like a playground, but not as large as a square kilometer or as small as a square centimeter or square millimeter.

MCQ 20: What unit will be used to measure the area of a tiny sticker like a glitter dot?

Choose 1 answer:

☒ Square millimeters

☐ Square centimeters

☐ Square meters

☐ Square kilometers

Answer: Square millimeters will be used to measure the area of a tiny sticker because it is a very small object. Square centimeters, square meters, and square kilometers are too large to be practical.

C CONVERSION OF AREA UNITS

C.1 CONVERTING AREA UNITS

Ex 21: Convert:

$$3\,\text{cm}^2 = \boxed{300}\ \text{mm}^2.$$

Answer:

- *Multiplication Method:*

$$\begin{aligned} 3\,\text{cm}^2 &= 3 \times 100\,\text{mm}^2 \\ &= 300\,\text{mm}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha			m²			cm²		mm²	
									3	0	0

So,

$$3\,\text{cm}^2 = 300\,\text{mm}^2$$

Ex 22: Convert:

$$5\,000\,\text{mm}^2 = \boxed{50}\ \text{cm}^2.$$

Answer:

- *Division Method:*

$$\begin{aligned} 5\,000\,\text{mm}^2 &= 5\,000 \div 100\,\text{cm}^2 \\ &= 50\,\text{cm}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha			m²			cm²		mm²	
								5	0	0	0

So,

$$5\,000\,\text{mm}^2 = 50\,\text{cm}^2$$

Ex 23: Convert:

$$6\,\text{m}^2 = \boxed{60000}\ \text{cm}^2.$$

Answer:

- *Multiplication Method:*

$$\begin{aligned} 6\,\text{m}^2 &= 6 \times 10\,000\,\text{cm}^2 \\ &= 60\,000\,\text{cm}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha			m²			cm²		mm²	
						6	0	0	0	0	

So,

$$6\,\text{m}^2 = 60\,000\,\text{cm}^2$$

Ex 24: Convert:

$$90\,000\,\text{cm}^2 = \boxed{9}\ \text{m}^2.$$

Answer:

- *Division Method:*

$$\begin{aligned} 90\,000\,\text{cm}^2 &= 90\,000 \div 10\,000\,\text{m}^2 \\ &= 9\,\text{m}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha			m²			cm²		mm²	
						9	0	0	0	0	

So,

$$90\,000\,\text{cm}^2 = 9\,\text{m}^2$$

C.2 CONVERTING AREA UNITS WITH DECIMAL NUMBERS

Ex 25: Convert:

$$24.5\,\text{m}^2 = \boxed{245000}\ \text{cm}^2.$$

Answer:

- *Multiplication Method:*

$$\begin{aligned} 24.5\,\text{m}^2 &= 24.5 \times 10\,000\,\text{cm}^2 \\ &= 245\,000\,\text{cm}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha				m²				cm²		mm²	
						2	4.	5	0	0	0		

So,

$$24.5\,\text{m}^2 = 245\,000\,\text{cm}^2$$

Ex 26: Convert:

$$5\,000\,\text{cm}^2 = \boxed{0.5}\ \text{m}^2.$$

Answer:

- *Division Method:*

$$\begin{aligned} 5\,000\,\text{cm}^2 &= 5\,000 \div 10\,000\,\text{m}^2 \\ &= 0.5\,\text{m}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha				m²				cm²		mm²	
							0.	5	0	0	0		

So,

$$5\,000\,\text{cm}^2 = 0.5\,\text{m}^2$$

Ex 27: Convert:

$$0.25\,\text{cm}^2 = \boxed{25}\ \text{mm}^2.$$

Answer:

- *Multiplication Method:*

$$\begin{aligned} 0.25\,\text{cm}^2 &= 0.25 \times 100\,\text{mm}^2 \\ &= 25\,\text{mm}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha				m²				cm²		mm²	
											0.	2	5

So,

$$0.25\,\text{cm}^2 = 25\,\text{mm}^2$$

Ex 28: Convert:

$$534\,\text{mm}^2 = \boxed{5.34}\ \text{cm}^2.$$

Answer:

- *Division Method:*

$$\begin{aligned} 534\,\text{mm}^2 &= 534 \div 100\,\text{cm}^2 \\ &= 5.34\,\text{cm}^2 \end{aligned}$$

- *Conversion Table Method:*

km²		ha				m²				cm²		mm²	
											5.	3	4

So,

$$534\,\text{mm}^2 = 5.34\,\text{cm}^2$$