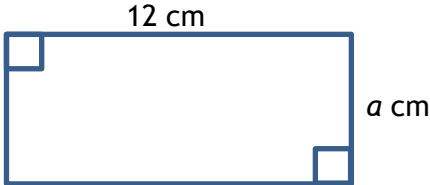
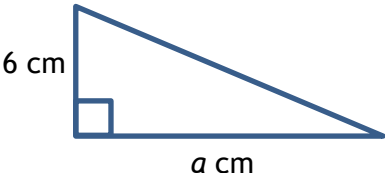
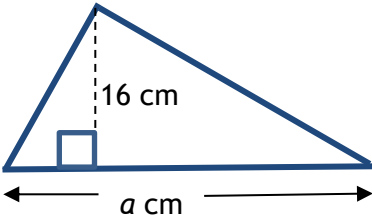
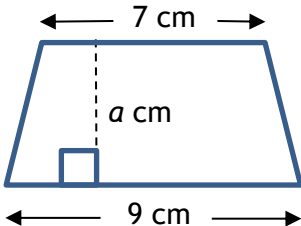
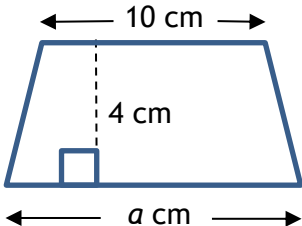
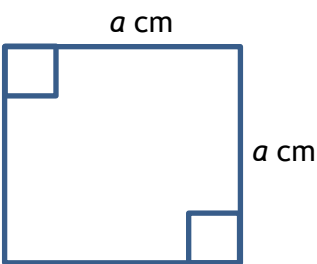
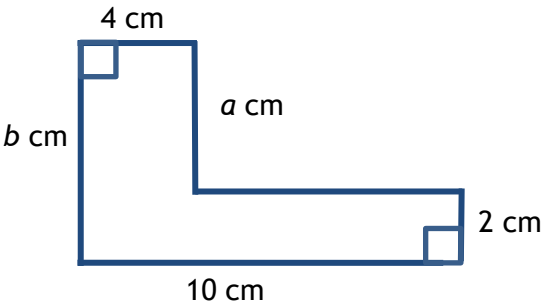


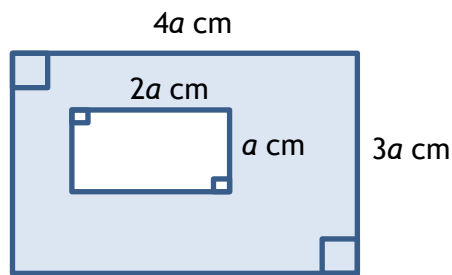
Each shape below has an area or shaded area of 48 cm^2 - The diagrams are not to scale.

Calculate the **exact** missing length for each shape or round your answer to 1 decimal place when necessary.

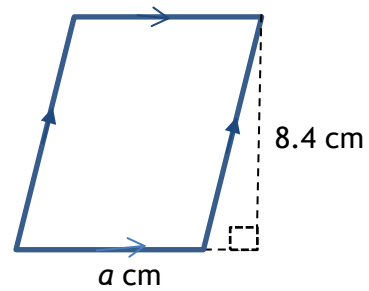
Use π as 3.14.

1. 	2. 
3. 	4. 
5. 	6. 
7. 	8. 

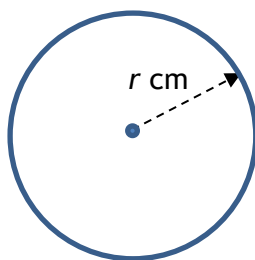
9.



10.

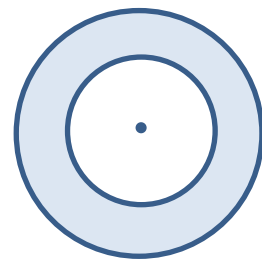


11.



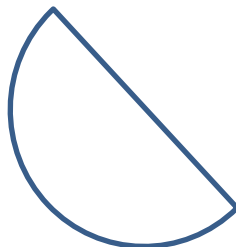
12.

The small circle has radius r cm and the large circle has radius 6 cm.



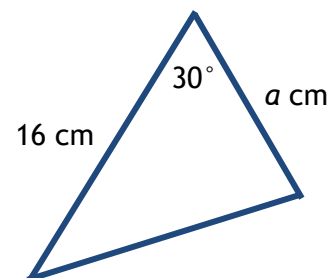
13.

The semi-circle has a diameter of d cm



14.

A challenge



Answers

1. $a = 4$ cm
2. $a = 16$ cm
3. $a = 6$ cm
4. $a = 6$ cm
5. $a = 14$ cm
6. $a = 4$ cm
7. $a = 4\sqrt{3} \approx 6.9$ cm
8. $a = 7$ cm and $b = 9$ cm
9. $a = 2\frac{\sqrt{30}}{5} \approx 2.2$ cm
10. $a = \frac{40}{7} \approx 5.7$ cm
11. $r = \sqrt{\frac{48}{\pi}} \approx 3.9$ cm
12. $r = \sqrt{\frac{12(3\pi-4)}{\pi}} \approx 4.6$ cm
13. $d = \sqrt{\frac{192}{\pi}} \approx 7.8$ cm
14. $a = 12$ cm