

Warm-Up Grade 7



1) Calculate the circumference of each circle.

a) $r = 4.2 \text{ m}$



b) $d = 24 \text{ cm}$



solutions on
next slide

Warm-Up Grade 7



1) Calculate the circumference of each circle.

a) $r = 4.2 \text{ m}$



$$\begin{aligned}c &= 2 \pi r \\ &= 2 \times 3.14 \times 4.2 \text{ m} \\ &= 26.376 \text{ m}\end{aligned}$$

b) $d = 24 \text{ cm}$



$$\begin{aligned}c &= \pi d \\ &= 3.14 \times 24 \text{ cm} \\ &= 75.36 \text{ cm}\end{aligned}$$

Calculating Circumference of a Circle

$$C = \pi d \quad C = 2\pi r$$

When we know the radius or diameter of a circle, we can use one of the formulas above to find the circumference of a circle.

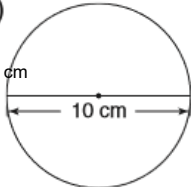
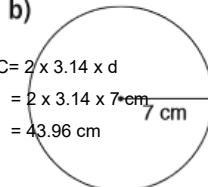
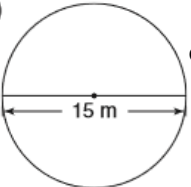
Circumference is a length, so its units are units of length such as m, cm, or mm.

Remember: 1 cm = 10 mm 1 m = 100 cm
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1, #2, #4, #5, #6, # 8

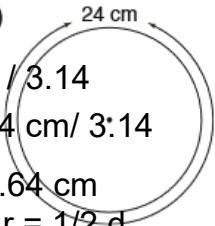
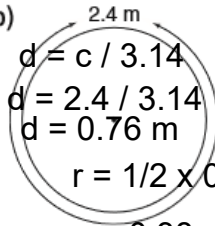
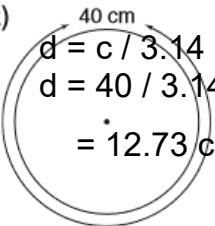
- 1.** Calculate the circumference of each circle.
Give the answers to two decimal places.
Estimate to check the answers are reasonable.

<p>a)</p> $C = 3.14 \times d$ $= 3.14 \times 10 \text{ cm}$ $= 31.4 \text{ cm}$		<p>b)</p> $C = 2 \times 3.14 \times r$ $= 2 \times 3.14 \times 7 \text{ cm}$ $= 43.96 \text{ cm}$		<p>c)</p> $C = 3.14 \times d$ $= 3.14 \times 15 \text{ m}$ $= 47.1 \text{ m}$	
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- 2.** Calculate the diameter and radius of each circle.
Give the answers to two decimal places.
Estimate to check the answers are reasonable.

$$C = 3.14 \times d$$

Rearrange
 $d = C / 3.14$

<p>a)</p> $d = C / 3.14$ $d = 24 \text{ cm} / 3.14$ $d = 7.64 \text{ cm}$ $r = 1/2 d$ $r = 3.82 \text{ cm}$		<p>b)</p> $d = C / 3.14$ $d = 2.4 / 3.14$ $d = 0.76 \text{ m}$ $r = 1/2 \times 0.76$ $= 0.38 \text{ m}$		<p>c)</p> $d = C / 3.14$ $d = 40 / 3.14$ $= 12.73 \text{ cm}$ $r = 1/2 \times 12.73 \text{ cm}$ $= 6.4 \text{ m}$	
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- 3.** When you estimate to check the circumference, you use 3 instead of π .
Is the estimated circumference greater than or less than the actual circumference?
Why do you think so? because you multiply by a smaller number

- 4.** A circular garden has diameter 2.4 m.
a) The garden is to be enclosed with plastic edging.
How much edging is needed?
b) The edging costs \$4.53/m.
What is the cost to edge the garden?



a) $C = \pi d$
 $= 3.14 \times 2.4 \text{ m}$
 $= 7.536 \text{ cm}$

b) $7.536 \times \$4.53 = \34.14

It will cost \$34. 14 to buy the edging.

1, #2, #4, #5, #6, # 8

5. a) Suppose you double the diameter of a circle.
What happens to the circumference?
b) Suppose you triple the diameter of a circle.
What happens to the circumference?
Show your work. triple cire

$$c = \pi d$$

$$= 3.14 \times (2 \times \text{diameter})$$

= It will double the circumference because what you do to one side it will do to the other

6. A carpenter is making a circular tabletop with circumference 4.5 m.
What is the radius of the tabletop in centimetres?

$$d = c / 3.14$$

Recall: 1 m = 100 cm

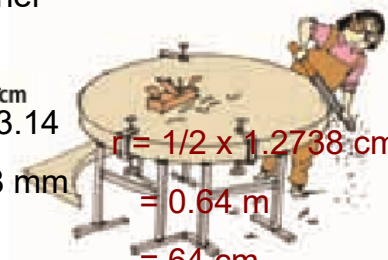
$$d = 4.5 \text{ m} / 3.14$$

$$= 1.2738 \text{ m}$$

$$r = 1/2 \times 1.2738 \text{ m}$$

$$= 0.64 \text{ m}$$

$$= 64 \text{ cm}$$



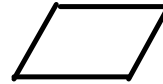
7. Can you draw a circle with circumference 33 cm?
If you can, draw the circle and explain how you know its circumference is correct.
If you cannot, explain why it is not possible.

8. **Assessment Focus** A bicycle tire has a spot of wet paint on it.
The radius of the tire is 46 cm.

Every time the wheel turns, the paint marks the ground.

- a) What pattern will the paint make on the ground as the bicycle moves?
b) How far will the bicycle have travelled between two consecutive paint marks on the ground?
c) Assume the paint continues to mark the ground.
How many times will the paint mark the ground when the bicycle travels 1 km?
Show your work.

Parallelograms



What is a parallelogram?

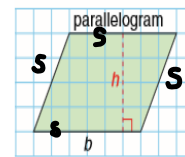
A **parallelogram** is a quadrilateral which has opposite sides that are parallel and equal. The opposite angles of a parallelogram are also equal.

What is a rhombus?

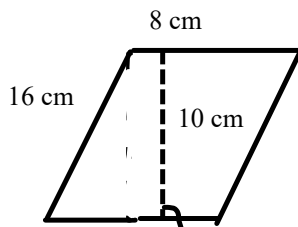
A **rhombus** is a special parallelogram that has 4 equal sides.

How do you find the perimeter and area of a parallelogram?

To find the perimeter add up the four sides of the parallelogram (be sure to add only the slant height and not the perpendicular height).



b represents the base.
h represents the height.
s is side s



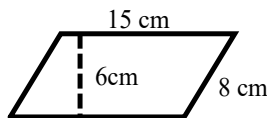
$$\begin{aligned} \text{Per} &= s + s + s + s \\ &= 8 + 16 + 8 + 16 \\ &= 48 \text{ cm} \end{aligned}$$

How do you find the area?

Area = b x h where *h* is the perpendicular height

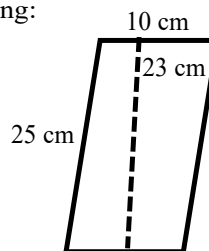
$$\begin{aligned} &= 8 \times 10 \\ &= 80 \text{ cm}^2 \end{aligned}$$

Find the perimeter and area of each of the following:



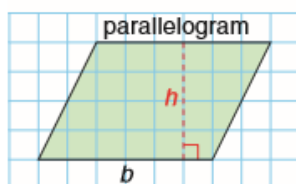
$$\begin{aligned} P &= S+S+S+S \\ &= 15+ 8+ 15 + 8 \\ &= 46 \text{ cm} \end{aligned}$$

$$\begin{aligned} A &= b \times h \\ &= 15\text{cm} \times 6\text{cm} \\ &= 90\text{cm}^2 \end{aligned}$$



$$\begin{aligned} P &= S+S+S+S \\ &= 10+ 25+ 10 + 25 \\ &= 60 \text{ cm} \end{aligned}$$

$$\begin{aligned} A &= b \times h \\ &= 10\text{cm} \times 23\text{cm} \\ &= 230\text{cm}^2 \end{aligned}$$



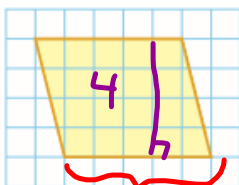
b represents the base.
 h represents the height.

Area of parallelogram:

$$A = bh$$

Find the area of this parallelogram

a)

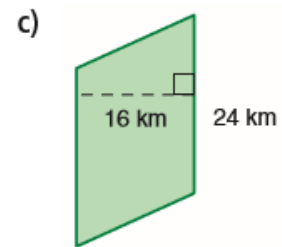
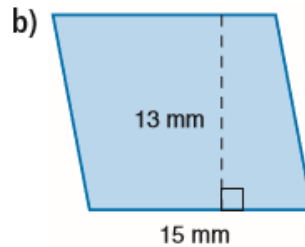
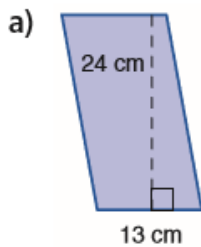


$$\begin{aligned} A &= bh \\ &= 5 \text{ units} \times 4 \text{ units} \\ &= 20 \text{ units}^2 \end{aligned}$$

base = 5

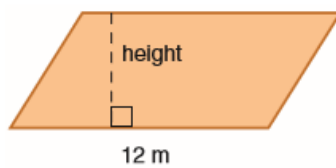
Complete the following questions

2. Find the area of each parallelogram.

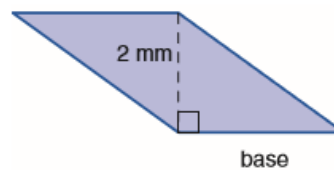


6. Use the given area to find the base or the height of each parallelogram.

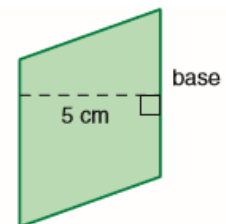
a) Area = 60 m^2



b) Area = 6 mm^2



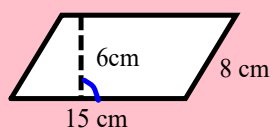
c) Area = 30 cm^2



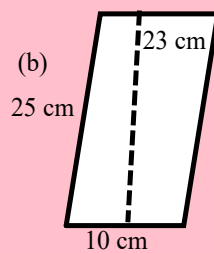
Complete the following questions

Find the area of each of the following:

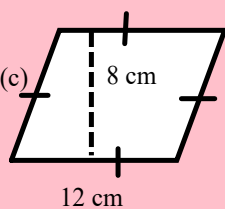
(a)



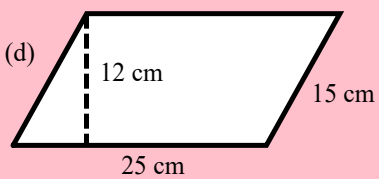
(b)



(c)

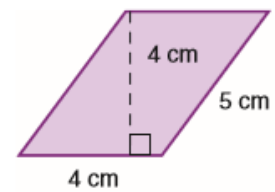


(d)



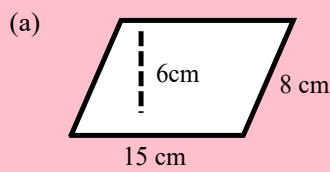
Complete the following question

8. A student says the area of this parallelogram is 20 cm^2 . Explain the student's error.



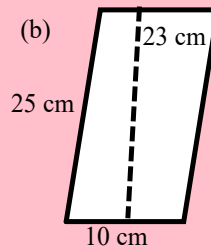
Solutions to pink slide

Find the perimeter and area of each of the following:



$$\begin{aligned} \text{Per} &= s + s + s + s \\ &= 15 + 8 + 15 + 8 \\ &= 46 \text{ cm} \end{aligned}$$

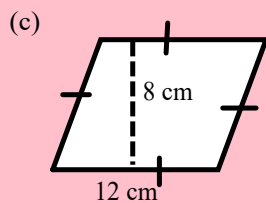
$$\begin{aligned} A &= b \times h \\ &= 15 \times 6 \\ &= 90 \text{ cm}^2 \end{aligned}$$



$$\begin{aligned} P &= s + s + s + s \\ &= 25 + 10 + 25 + 10 \\ &= 70 \text{ cm} \end{aligned}$$

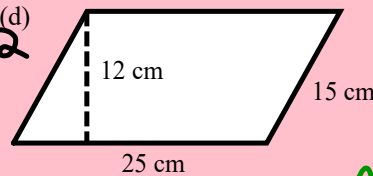
$$\begin{aligned} A &= b \times h \\ &= 10 \times 23 \\ &= 230 \text{ cm}^2 \end{aligned}$$

😊



$$\begin{aligned} P &= s + s + s + s \\ &= 12 + 12 + 12 + 12 \\ &= 48 \text{ cm} \end{aligned}$$

$$\begin{aligned} A &= b \times h \\ &= 12 \times 8 \\ &= 96 \text{ cm}^2 \end{aligned}$$



$$\begin{aligned} P &= s + s + s + s \\ &= 25 + 15 + 25 + 15 \\ &= 80 \text{ cm} \end{aligned}$$

$$\begin{aligned} A &= b \times h \\ &= 25 \times 12 \\ &= 300 \text{ cm}^2 \end{aligned}$$