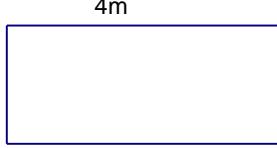
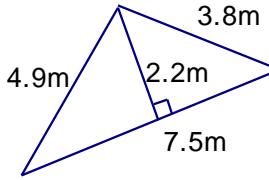
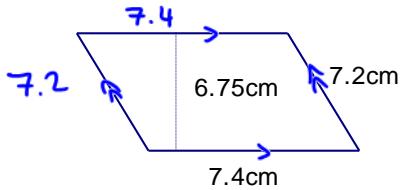
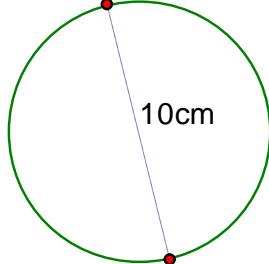
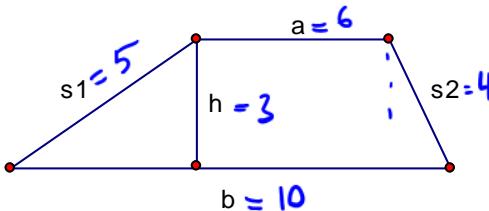


Review: Perimeter & Area of Basic Shapes

SHAPE	PERIMETER	AREA
Rectangle/Square 	$P = 2l + 2w$ $P = 2 \cdot 4 + 2 \cdot 2$ $P = 8 + 4$ $P = 12\text{m}$	$A = l \times w$ $A = 4 \times 2$ $A = 8\text{m}^2$
Triangle 	$P = s_1 + s_2 + s_3$ $P = 4.9 + 3.8 + 7.5$ $P = 16.2\text{m}$	$A = \frac{b \times h}{2}$ $A = \frac{7.5 \times 2.2}{2}$ $A = 8.25\text{m}^2$
Parallelogram 	$P = s_1 + s_2 + s_3 + s_4$ $P = 7.2 + 7.4 + 7.2 + 7.4$ $P = 29.2$	$A = b \times h$ $A = 7.4 \times 6.75$ $A = 49.95\text{cm}^2$
Circle 	$C = 2\pi r$ or $C = \pi d$ $C = \pi \cdot 10$ $C = 31.4\text{cm}$	$A = \pi \times r^2$ $A = \pi \cdot 5^2$ $A = 78.5\text{cm}^2$
Trapezoid 	$P = a + b + s_1 + s_2$ $P = 10 + 6 + 5 + 4$ $P = 25$	$A = \frac{1}{2}(a + b)h$ $A = \frac{1}{2}(10 + 6) \cdot 3$ $A = \frac{1}{2} \cdot 16 \cdot 3$ $A = 24\text{cm}^2$

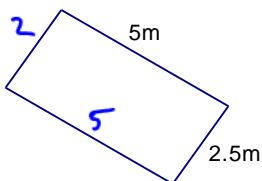
What would you do if you know only the radius? $\times 2$

* remember the radius is half the diameter.

Practice: Area and Perimeter

Find the area and perimeter (circumference) of each figure:

a.Rectangle



$$\begin{aligned} P &= 2(5) + 2(2.5) \\ &= 10 + 5 \\ &= 15 \text{ m} \end{aligned}$$

$$\begin{aligned} A &= L \cdot W \\ &= 5(2.5) \\ &= 12.5 \text{ m}^2 \end{aligned}$$

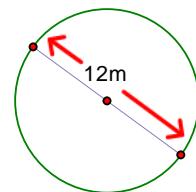
b.Triangle

$$\begin{aligned} c^2 &= a^2 + b^2 \\ c^2 &= 12^2 + 9^2 \\ c^2 &= 144 + 81 \\ c^2 &= 225 \\ c &= \sqrt{225} \\ c &= 15 \end{aligned}$$

$$\begin{aligned} P &= 12 + 9 + 15 \\ &= 36 \text{ m} \end{aligned}$$

$$\begin{aligned} A &= \frac{1}{2} \cdot b \cdot h \\ &= \frac{1}{2} \cdot 12 \cdot 9 \\ &= 54 \text{ m}^2 \end{aligned}$$

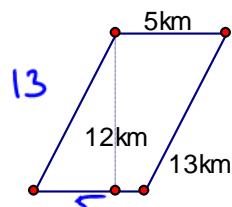
c.Circle



$$\begin{aligned} C &= \pi d \\ &= 12\pi \\ &= 37.70 \text{ m} \end{aligned}$$

$$\begin{aligned} A &= \pi r^2 & r = 6 \text{ m} \\ &= \pi 6^2 \\ &= 36\pi \\ &= 113.09 \text{ m}^2 \end{aligned}$$

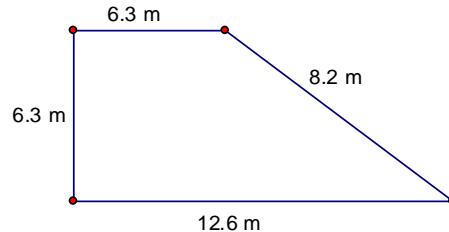
d.Parallelogram



$$\begin{aligned} P &= 13 + 5 + 13 + 5 \\ &= 36 \text{ km} \end{aligned}$$

$$\begin{aligned} A &= b \times h \\ &= 5 \cdot 12 \\ &= 60 \text{ km}^2 \end{aligned}$$

e.Trapezoid



$$\begin{aligned} P &= 6.3 + 6.3 + 8.2 + 12.6 \\ &= 33.4 \text{ m} \end{aligned}$$

$$\begin{aligned} A &= \frac{1}{2} (6.3 + 12.6) \times 6.3 \\ &= \frac{1}{2} (18.9)(6.3) \\ &= 59.5 \text{ m}^2 \end{aligned}$$

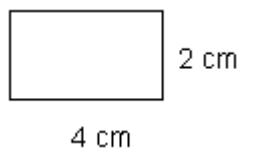
ANSWERS: a. $A=12.5 \text{ m}^2$, $P=15 \text{ m}$, b. $A=54 \text{ m}^2$, $P=36 \text{ m}$, c. $A=226.08 \text{ m}^2$, $C=37.68 \text{ m}$, d. $A=60 \text{ km}^2$, $P=36 \text{ km}$, e. $A=59.5 \text{ m}^2$, $P=33.4 \text{ m}$

$P=36 \text{ m}$ $A=113.09 \text{ m}^2$

More Area & Perimeter Practice

Find the area and perimeter of the following shapes:

f.



$$\begin{aligned} A &= L \cdot W \\ &= 4 \cdot 2 \\ &= 8 \text{ cm}^2 \end{aligned}$$

2 cm

g.



$$\begin{aligned} A &= L \cdot W \\ &= 5 \cdot 3 \\ &= 15 \text{ cm}^2 \end{aligned} \quad \begin{aligned} P &= 2L + 2W \\ &= 2 \cdot 5 + 2 \cdot 3 \\ &= 10 + 6 \\ &= 16 \text{ cm} \end{aligned}$$

3 cm

h.



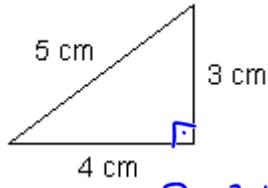
$$\begin{aligned} C &= 2\pi r \\ &= 2 \cdot \pi \cdot 2 \\ &= 4\pi \\ &= 12.57 \end{aligned}$$

A = 8 \text{ cm}^2 P = 12 \text{ cm}

A = 15 \text{ cm}^2 P = 16 \text{ cm}

A = 12.57 \text{ cm}^2 P = 12.57 \text{ cm}

i.



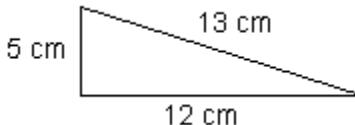
$$\begin{aligned} A &= \frac{1}{2} \cdot 3 \cdot 4 \\ &= 6 \text{ cm}^2 \end{aligned}$$

3 cm

5 cm

4 cm

j.



$$\begin{aligned} A &= \frac{1}{2} \cdot 5 \cdot 12 \\ &= 30 \text{ cm}^2 \end{aligned} \quad \begin{aligned} P &= 5 + 12 + 13 \\ &= 30 \text{ cm} \end{aligned}$$

13 cm

12 cm

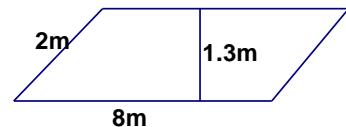
5 cm

A = 6 \text{ cm}^2 P = 12 \text{ cm}

A = 30 \text{ cm}^2 P = 30 \text{ cm}

A = 113.10 \text{ cm}^2 P = 37.70 \text{ cm}

l.



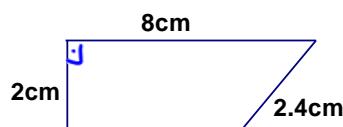
$$\begin{aligned} A &= \frac{1}{2} (2+8) \cdot 1.3 \\ &= 52 \text{ m}^2 \end{aligned} \quad \begin{aligned} P &= 2+8+2+2 \\ &= 20 \text{ m} \end{aligned}$$

1.3m

2m

8m

m.



$$\begin{aligned} A &= \frac{1}{2} (5+8) \cdot 2.4 \\ &= 13 \text{ cm}^2 \end{aligned} \quad \begin{aligned} P &= 5+2+2.4+8 \\ &= 17.4 \text{ cm} \end{aligned}$$

2.4cm

5cm

8cm

A = 52 \text{ m}^2 P = 20 \text{ m}

A = 13 \text{ cm}^2 P = 17.4 \text{ cm}

A = 48 \text{ cm}^2 P = 30 \text{ cm}

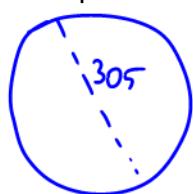
ANSWERS: f. 8 cm^2 , 12cm, g. 15 cm^2 , 16cm, h. 12.56 m^2 , 12.56cm, i. 6 cm^2 , 12cm, j. 30 cm^2 , 30cm, k. 113.04 cm^2 , 37.68cm, l. 10.4 m^2 , 20m, m. 13 cm^2 , 17.4cm, n. 48 cm^2 , 30cm

Area and Perimeter Problems

Complete the table for the circles with the following dimensions/measurements:

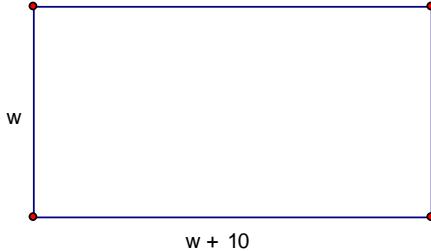
	Radius	Diameter	Circumference	Area
o.	7 cm	14 cm	$C = 14\pi \approx 43.98$	$A = \pi(7)^2 \approx 153.94$
p.	10.5 cm	21 cm	$21\pi \approx 65.97$	$= \pi(10.5)^2 \approx 346.36$
q.	2.99	5.98 km	$\frac{\pi d}{\pi} = \frac{5.98}{\pi} \approx 1.884$ cm	$\pi(2.99)^2 \approx 28.25$
r..	12	24	$24\pi \approx 75.40$ cm	$\frac{\pi r^2}{\pi} = \frac{452.39}{\pi} \text{ m}^2 \quad r^2 = 144 \quad r = 12$

s. The world's largest dish radio telescope has a diameter of 305 m. What is the circumference of the telescope?



$$\begin{aligned} C &= \pi d \\ &= 305\pi \\ &= 958.19 \text{ m} \end{aligned}$$

u.



Determine the simplified expression for the perimeter of this rectangle

$$\begin{aligned} P &= 2w + 2(w+10) \rightarrow 4w + 20 \\ &= 2w + 2w + 20 \end{aligned}$$

Determine the simplified expression for the area of this rectangle

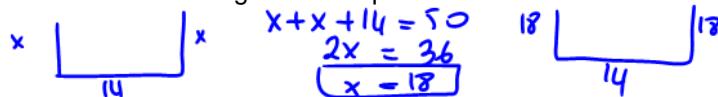
$$\begin{aligned} A &= w(w+10) \\ &= w^2 + 10w \end{aligned}$$

Calculate the value of w if the perimeter is 76 units

$$\begin{aligned} 4w + 20 &= 76 \\ 4w &= 56 \\ w &= 14 \\ \boxed{w = 14} \quad \boxed{153.94} \end{aligned}$$

t. A pool has a 50-m fence around 3 sides. One side is 14 m and the other sides are equal.

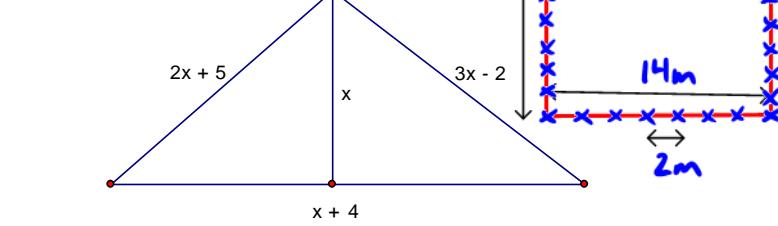
a. How long is each equal side?



b. Fence posts costing \$15.59 each are placed every 2 m. how much do the posts cost?

$$\begin{aligned} 10 \times 2 &= 20 \text{ posts} + 6 \text{ posts} \\ \text{Total posts} &= 26 \end{aligned}$$

$$26 \times \$15.59 = \$405.34$$



Determine the simplified expression for the perimeter of this triangle

$$\begin{aligned} P &= 2x+5 + 3x-2 + x+4 \\ &= 6x+7 \end{aligned}$$

Determine the simplified expression for the area of this triangle

$$A = \frac{1}{2} \cdot x \cdot (x+4) = \frac{x(x+4)}{2} = \frac{x^2+4x}{2}$$

Calculate the area if x=11

$$A = \frac{x(x+4)}{2} = \frac{11(11+4)}{2} = 82.5$$

ANSWERS: o. 14, 43.96, ~~100.14~~, p. 10.5, 65.94, 346.785, q. 3, 6, 28.26, r. 12, 24, 75.36, s. 957.7m, t. 18m, \$389.75, u. P=4w+20, A=w^2+10w, w=14, v. P=6x+7, A=(x^2+4x)/2, 82.5 \text{ units}^2