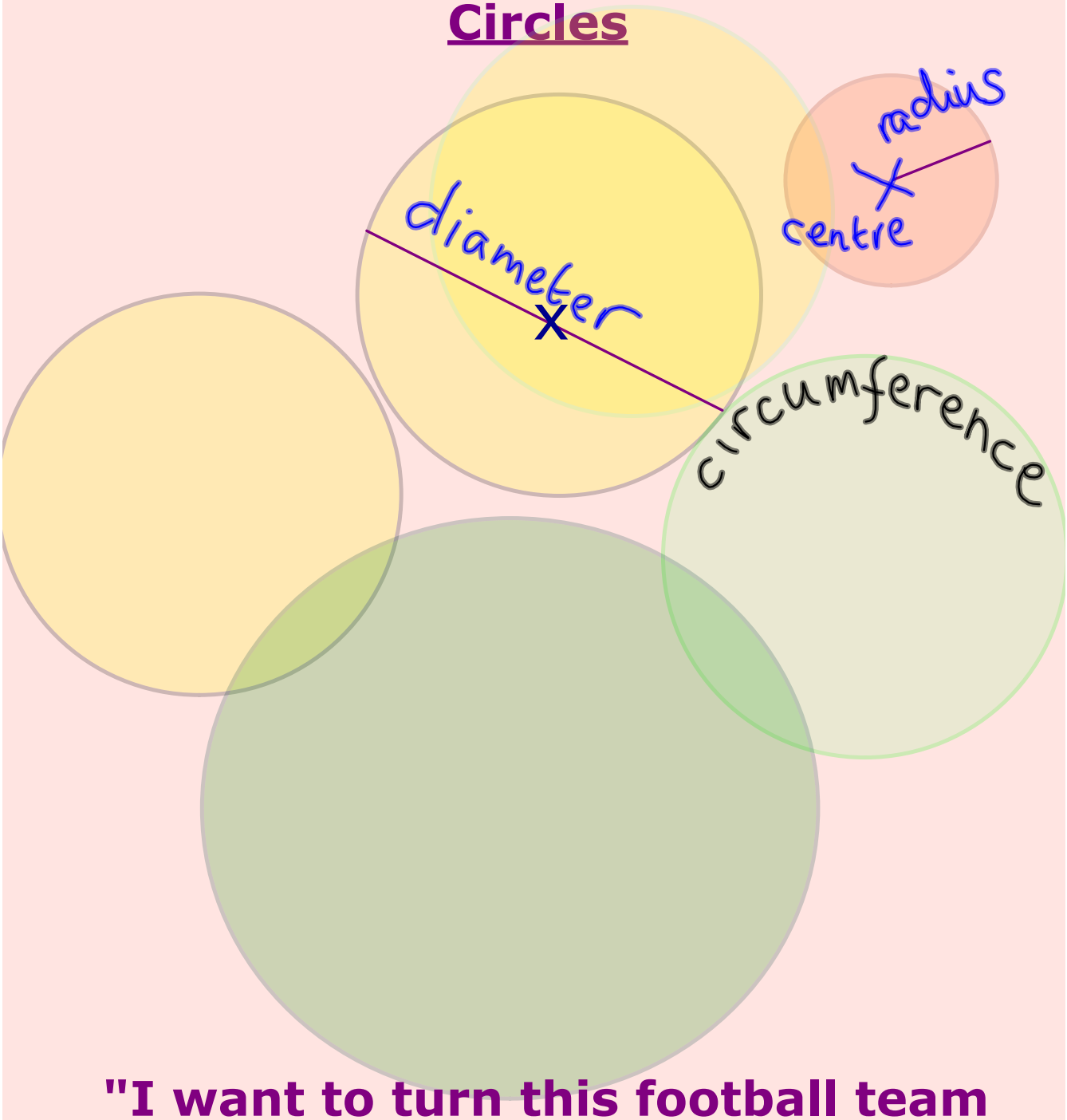
Circles



"I want to turn this football team around 360^0!"

Beating the odds: the hidden mathematics of sport

The Circumference

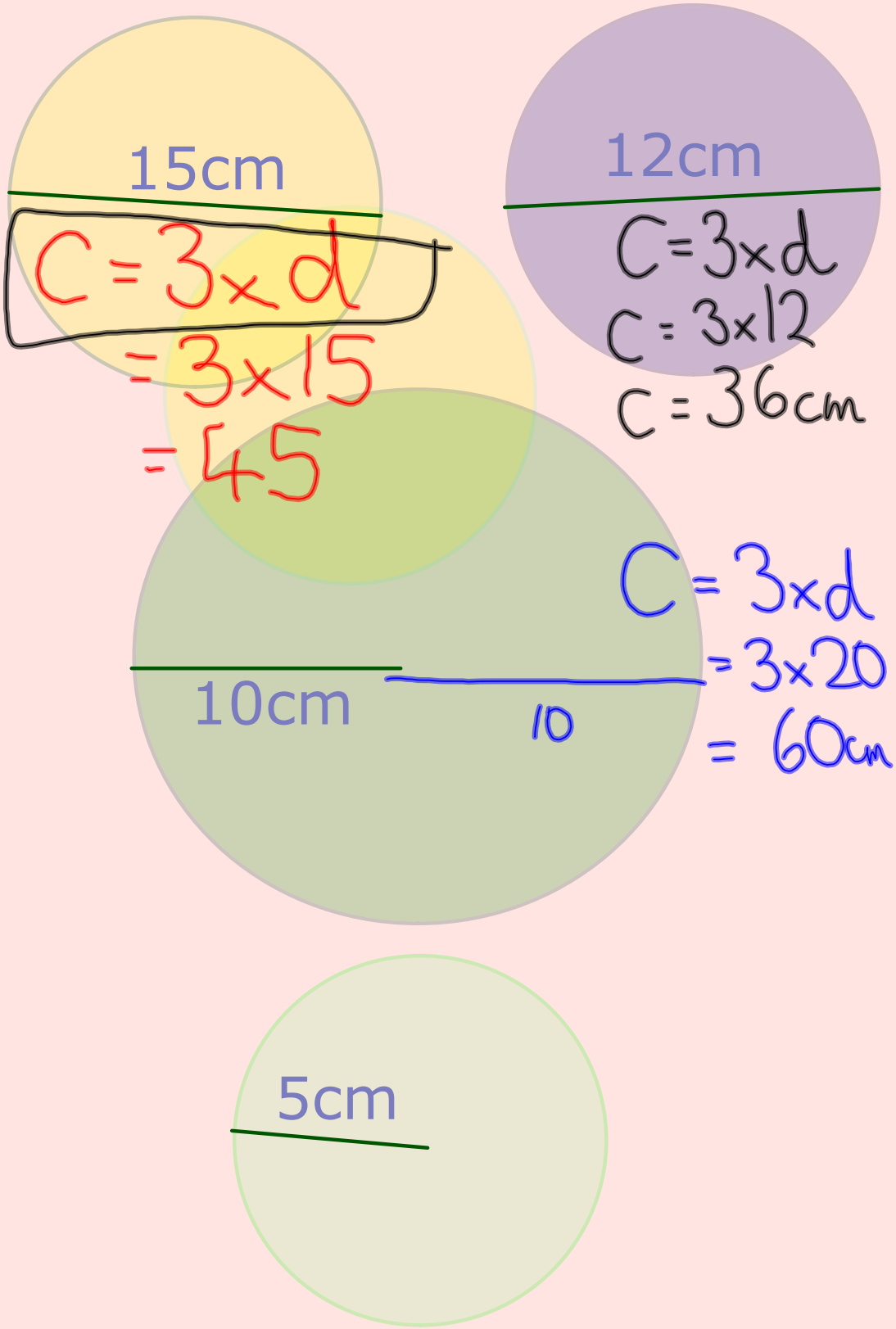
We are going to try and find a rule linking the length of the diameter with the circumference.

Make a table like this:

item	diameter	circumference
mat	20cm	63cm ✓
bowl	14cm	48cm
cup	6.3	21cm ✓
pencil holder	4.5cm	15cm ✓

circumference = 3 x diameter

Circumference of Circles



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Finding the diameter.

Circumference = 12cm

$C = 3 \times d$

$12 = 3 \times ?$

$d = 4$

$d = C \div 3$

$d = \frac{C}{3}$

C= 30cm

C= 15cm

$C = 3 \times d$

$15 = 3 \times 5$

$d = 5$

C= 33cm
Find the radius.

$d = 33 \div 3$

$d = 11cm$

$r = 5\frac{1}{2}cm$

C= 12cm
Find the radius.

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Circles and Diameters

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Copy the table and, using your calculator, try to find a better number than 3 to multiply by.

π - pi

Circumference = $\pi \times d$

Pi

π

$C = \pi \times d$

π=3.141592.....

Use the π key on your calculator to work out the circumference of these circles:

1) diameter = 9cm

C=π x d

$C = \pi \times 9$

$C = 28.27$ cm

2) diameter = 13cm

$C = \pi \times d$

$C = \pi \times 13$

$C = 40.84$ cm

3) diameter = 4m

4) radius = 4 cm

d = 8cm

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$C = \pi \times d$

$C = \pi \times 8$

$C = 25.13$ cm

Finding the circumference using π

D4 a) $C = \pi \times d$

$C = \pi \times 2.6$

$C = 8.17$ cm

b) $C = \pi \times d$

$C = \pi \times 3.4$

$C = 10.68$ cm

Using Pi (π)

Find the circumference of circles with

1) diameter 10cm
2) Diameter = 4cm
3) diameter = 7cm
4) radius = 11cm
5) radius = 2cm

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