June 14th	5-a-day	Numeracy

Using the digits 5, 8 and 9 only once in each number:

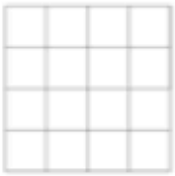
Write as many three-digit numbers as you can

589 958
598 985
859
895

What percentage of this grid is shaded?

80%

Harry wants to shade whole squares so that exactly $\frac{4}{5}$ is shaded.
Explain why this is not possible.



16 squares

$\frac{4}{5}$ of 16 would be a decimal number

Write as a mixed number

$\frac{11}{3}$ $3\frac{2}{3}$

A tea costs 45p

What is 45p as a fraction of £1.35

$\frac{45}{135}$

Give your answer in its simplest form.

$\frac{1}{3}$

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June 14	5-a-day	Foundation

Make c the subject of

$y = mx + c$

$-mx \quad -mx$

$y - mx = c$

John and Sam's ages are in ratio 4:5

John is 24.

How old is Sam?

$24 \div 4 = 6$

$6 \times 5 = 30$

30

Find the highest common factor of 20 and 16

4

20 : 1 2 **4** 5 10 20

16 : 1 2 **4** 8 16

Solve $2y + 3 > 21$

$-3 \quad -3$

$2y > 18$

$y > 9$

Find the length of AB

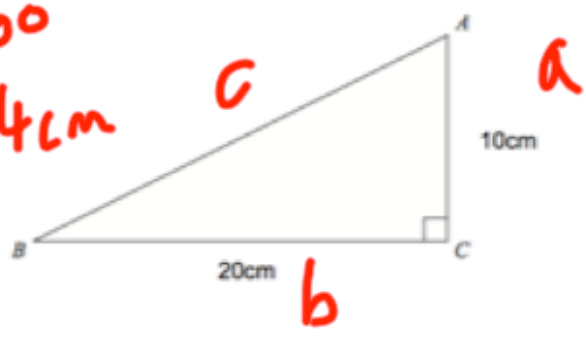
$a^2 + b^2 = c^2$

$10^2 + 20^2 = c^2$

$100 + 400 = c^2$

$c = \sqrt{500}$

$c = 22.4\text{cm}$



c

a

b

June 14	5-a-day	Higher

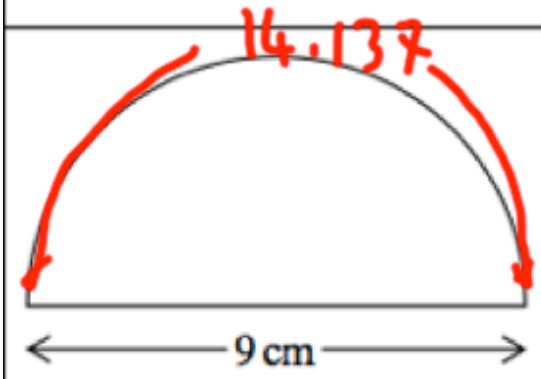
Solve:

$5(x - 3) = 2x + 30$

$5x - 15 = 2x + 30$

$3x = 45$

$x = 15$



Calculate the perimeter

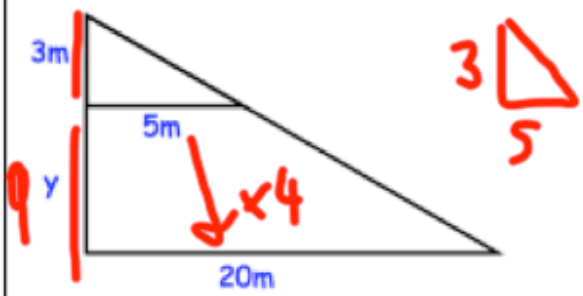
$(\pi \times 9) \div 2 = 14.137\text{cm}$

$14.137\text{cm} + 9\text{cm}$

$= 23.137\text{cm}$

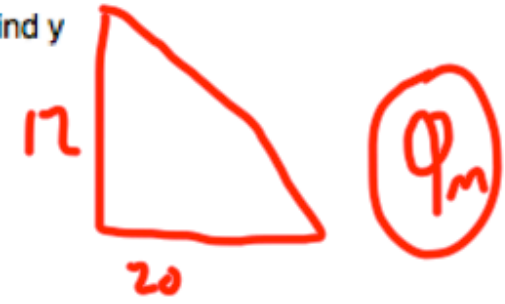
Explain why $7x + 3$ cannot be factorised.

7 & 3 have no common factors, except 1.



3
5

Find y



The speed of a particle is 4.2×10^5 m/s

How far does it travel in a day?

day = 86400 seconds.

Give your answer in kilometres and in standard form.

$d = s \times t$

$d = 4.2 \times 10^5 \times 8.64 \times 10^4$

$= 3.6288 \times 10^{10}$ m

$= 3.6288 \times 10^7$ km