Name: _____ 5-a-day Higher Plus

2nd April

Corbettmaths

M T W T F
5 × 6 × 8 × 8

M T W F
5 × 6 × 8 × 10

M T T F
5 × 6 × 8 × 10

M W T F
5 × 8 × 8 × 10

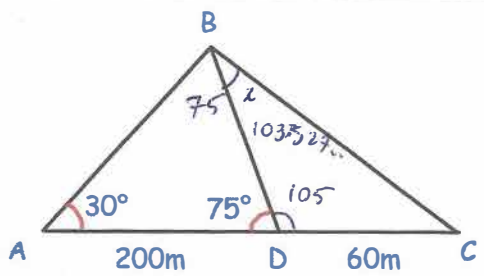
T W T F
6 × 8 × 8 × 10

A gym runs many exercise classes.
Monday: 5 different classes
Tuesday: 6 different classes
Wednesday: 8 different classes
Thursday: 8 different classes
Friday: 10 different classes.

1920
2400
2400
3200
+ 3840
13760

Shea goes one exercise class on 4 different days.
How many different possible combinations are there?

13760



Find the length of BD

$\frac{BD}{\sin 30} = \frac{200}{\sin 75}$

$BD = 103.527618$ m

Find the length BC

$BC^2 = 60^2 + 103.52..^2 - 2 \times 60 \times 103.. \times \cos 105$

$BC^2 = 17533.358$

$BC = 132.4135869$ m

Find the size of angle CBD

$\frac{\sin x}{60} = \frac{\sin 105}{132.413..}$

$x = 25.956°$

Liquid A has a density of 0.9g/cm³
Liquid B has a density of 1.4g/cm³
Liquid C has a density of 0.75g/cm³

200g of liquid A, 1kg of liquid B and 500g of liquid C are mixed to make liquid D.

Work out the density of liquid D

Volume of A = 200 ÷ 0.9 = 222.2̇
Volume of B = 1000 ÷ 1.4 = 714.285 7..
Volume of C = 500 ÷ 0.75 = 666.6̇
1603.174588 cm³

density of D = 1700 ÷ 1603.174588

1.06 g/cm³