



Proportion: The Vitruvian Man

NAME:

CLASS:

DATE:



Basic

1) Orange paint is made by mixing 11 parts yellow paint to 9 parts red paint.
Fred wants to make 40 litres of orange paint. How much red paint will he need?

2) A school employs teachers to number of children in the ratio 1:23.

a) If the school has 1100 children, how many teachers does it need?

b) If the school has 17 teachers, how many children can it take?

3) Express the following ratios in their simplest form:

a) 5:20

b) 14:21

c) 36:18

d) 105:100

4) Express the following ratios in their simplest form:

a) 36:40

b) 6mm:3cm

c) 2.5m:6m



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Basic

5) The dimensions of a room are length 12m and width 8m. What is the ratio of:

a) its length to its width?

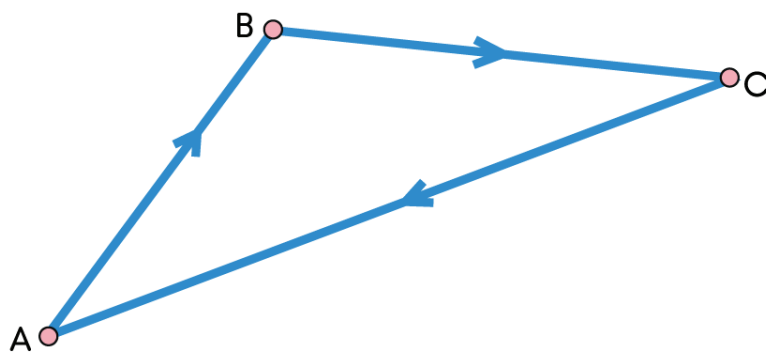
b) its width to its length?

6) £55 is split between Kim and Kat in the ratio 3:2.

How much will Kim and Kat each get?

7) The ratio of lemon cordial to water when making lemon squash is 2:8. Using 40ml of cordial, how much water is needed?

8) The course of a yacht race from point A to point B to point C and back to point A is shown in the diagram below. Using the scale of 1cm to 50km, calculate the total distance of the completed course.



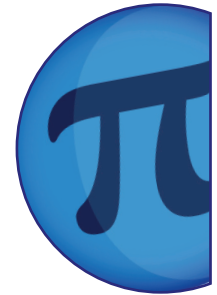


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Core

1) Express the following ratios in their simplest form:

a) 5:20

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c) 36:18

d) 105:100

2) Express the following ratios in their simplest form:

a) 36:40

b) 6mm:3cm

c) 2.5m:6m

3) £55 is split between Kim and Kat in the ratio 3:2. How much will Kim and Kat each get?

4) The ratio of lemon cordial to water when making lemon squash is 2:8. Using 40ml of cordial, how much water is needed?



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Core

5) Express the following ratios in the form 1:n:

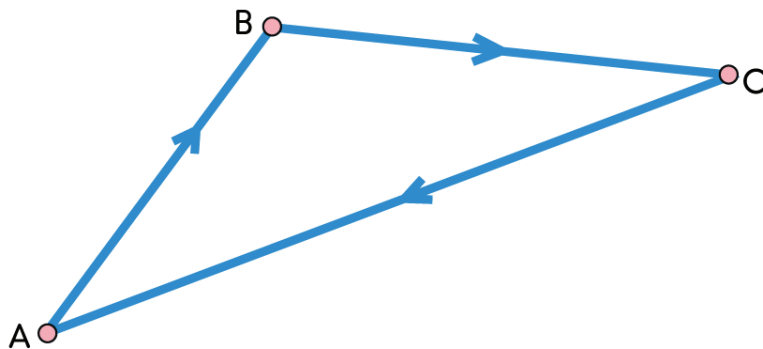
a) 3:18

b) 4:10

c) 4:31

d) 4:15

6) The course of a yacht race from point A to point B to point C and back to point A is shown in the diagram below. Using the scale of 1cm to 50km, calculate the total distance of the completed course.



7) On a map, the scale is 1:125,000.

a) If the distance between Hamilton and Glasgow is shown on the map as 8cm, how far apart are they in real terms? Give your answer in km.

b) The actual distance between Glasgow and Paisley is 12km. How many centimetres will represent this distance on the same map?

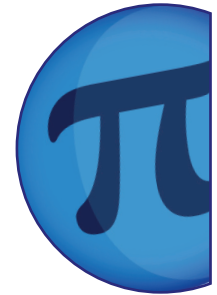


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Advanced

1) Express the following ratios in their simplest form:

a) 36:40

b) 6mm:3cm

c) 2.5m:6m

2) The ratio of lemon cordial to water when making lemon squash is 2:8. Using 40ml of cordial, how much water is needed?

3) Express the following ratios in the form 1:n

a) 3:18

b) 4:10

c) 4:31

d) 4:15



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Advanced

4) The scale of a map is 1:125,000.

a) If the distance between Hamilton and Glasgow is shown as 8cm, how far apart are they in real terms?

Give your answer in km.

b) The actual distance between Glasgow and Paisley is 12km. How many centimetres will represent this distance on the same map?

5) The perimeter of a triangle is 75cm. The sides have lengths a , b and c . The ratio of b to a is 3:5, and the ratio of c to a is 7:5. Find the length of each side.

6) Three schoolchildren gather 175 chestnuts and divide them up so that their amounts are in the same proportion as their ages. Thus, for every 4 chestnuts taken by Mary, Amanda takes 3, and for every 6 that Mary receives, Mark takes 7.

a) How many chestnuts did each girl get?

b) How old were each of the children?

7) Draw an isosceles triangle where the ratio of its base size to its perpendicular height is 2:1 and its area is 36cm^2 .

