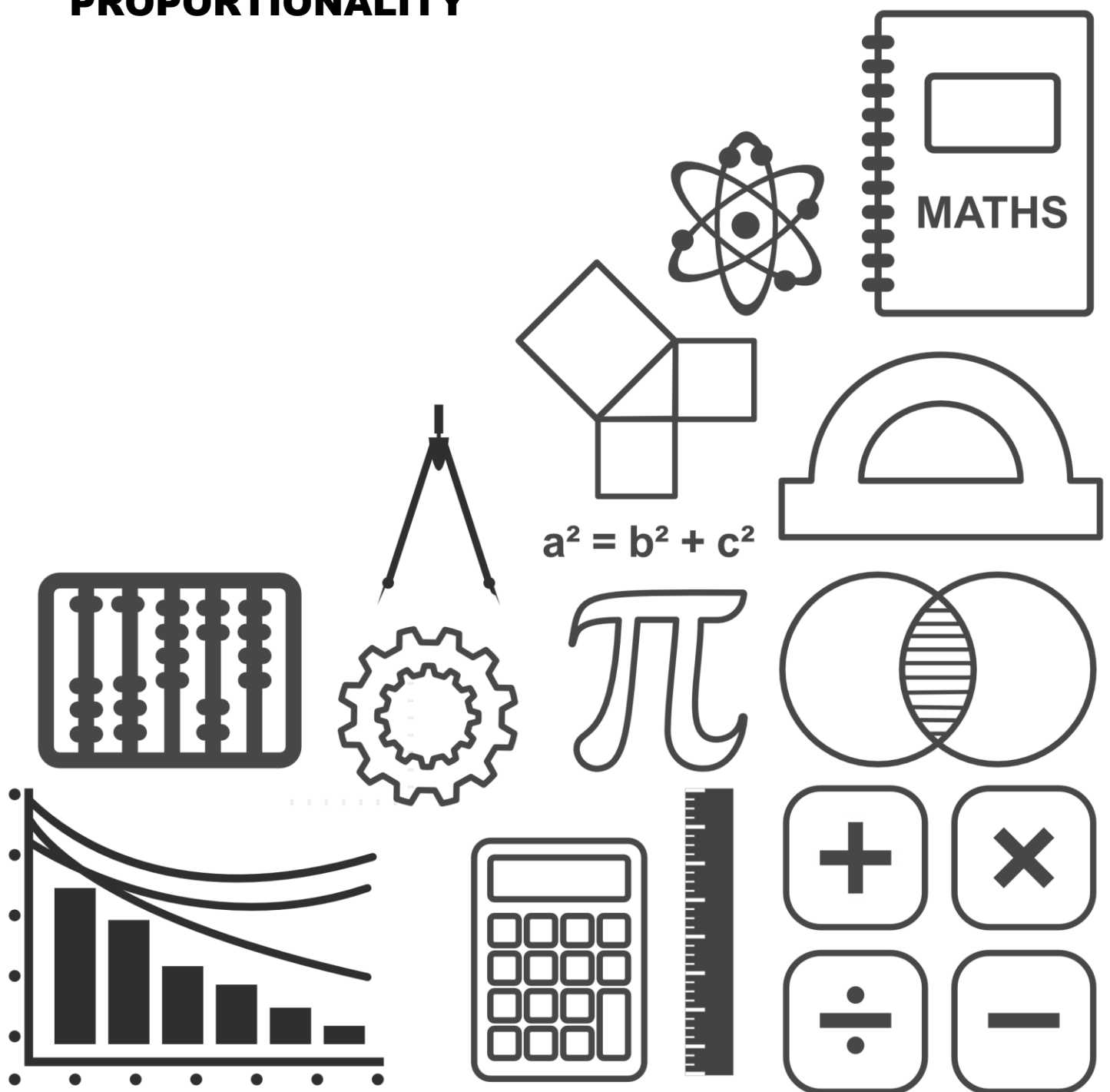


GCSE TOPIC BOOKLET PROPORTIONALITY



How long would it take to empty 2 of these tanks using 3 of these pumps?
Give your answer in hours and minutes.

[illegible]

2.

Calculate the cost of the sand per tonne.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

3.

A farmer is planning to fertilize one of his fields.
The fertilizer he needs is sold in two different sized bags.

- Each size A bag covers an area of 40 m^2 and costs £13.
- Each size B bag covers an area of 70 m^2 and costs £20.

The farmer knows that 65 size A bags contain **exactly** enough fertilizer for the field. The local supplier has only size B bags in stock.

Calculate the difference in the cost of buying 65 size A bags and the cost of buying the least number of size B bags needed to fertilize the field. [4]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings visible.

Calculate the least number of manual workers the company should employ for this contract.

[The page contains faint horizontal lines suggesting bleed-through from the reverse side.]

5.

Azira knows that 9 tins of size A will be just enough to paint all of the walls.

[illegible]

A local council needs to drain 450 000 litres of water from a flooded area. The work must not take more than 3 hours to complete.

[3]

7.

What is the minimum number of tractors that will be needed to plough 19 acres in less than 5 hours?

[4]

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- [3]

- [2]

- [3]

10.

A fruit grower knows that it usually takes 20 workers 8 hours to pick 420 kg of strawberries. She needs to pick 360 kg of strawberries in 5 hours.

What is the minimum number of workers she should employ?
You may assume that all workers pick strawberries at the same rate.

[4]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

11.

Equal-sized trucks were hired to carry 250 tons of soil from one building site to another.

On the first day, it took 10 hours for 3 of these trucks to move 100 tons of soil.
On the second day, 5 of these trucks were used to move the remaining 150 tons of soil.

How long did it take to complete the work on the second day?

You may assume that all other conditions remained the same for both days.

[3]

[illegible]