

# Discussion Problems

## Step 1: Three Decimal Places

### National Curriculum Objectives:

Mathematics Year 6: (6F9a) [Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places](#)

Mathematics Year 6: (6F10) [Solve problems which require answers to be rounded to specified degrees of accuracy](#)

### About this resource:

This resource has been designed for pupils who understand the concepts within [this step](#). It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More [Year 6 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

# Three Decimal Places

1. Diana the Decorator has 3 different numbers, but has hidden them under a layer of paint. She has given a clue for each of her numbers below.

She says,



I have not used the same digit more than twice in my 3 numbers. The digit sums of each of my numbers give the same total when added together.



What could Diana's 3 numbers be? Explore the different possible solutions.

DP

2. Help! Stratos the Spartan has been tasked to slay a deadly gorgon.

He enters the maze with a starting number of 96.508, but in order to avoid alerting the creature, he must reach a number between 100.5 to 109.9 to exit the maze.



Add 7.119	Add 9.9	Subtract 17.83	Add 6.7	Add 19.291
Subtract 6.9	Add 6.3	Add 19.52	Subtract 9.27	Add 14.75
Subtract 5.86	Subtract 6.75	Subtract 12.859	Add 13.551	Subtract 28.76
Add 0.639	Add 12.4	Subtract 31.9	Add 21.89	Add 16.853
Add 1.999	Add 10.7	Subtract 10.01	Subtract 11.8	Add 2.9



Investigate the different possible routes Stratos could take in order to reach his target number. He can only enter the maze from the right and exit from the left.

DP

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She says,



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What could Diana's 3 numbers be? Explore the different possible solutions.

**Various answers, for example: 5.4, 5.22 and 7.101**

DP

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**Various answers, for example (above): Stratos would end up with the number 105.807**

DP