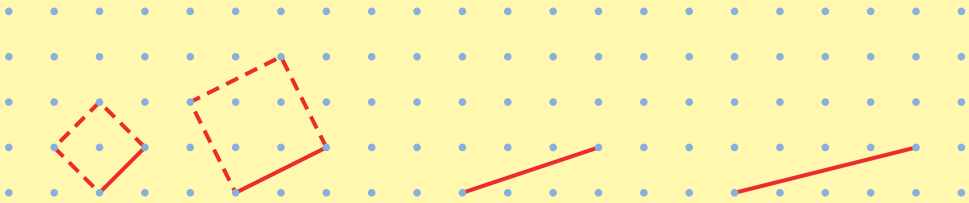
Tilted squares

Generalising and creating formulae

'One tilt' squares

Complete the squares and find their areas.



What do you notice from your results?

Test out your theory with a square based on an 8/1 line segment. This means that the bottom right corner is *along* 8 and *up* 1 from the bottom left corner of the square.

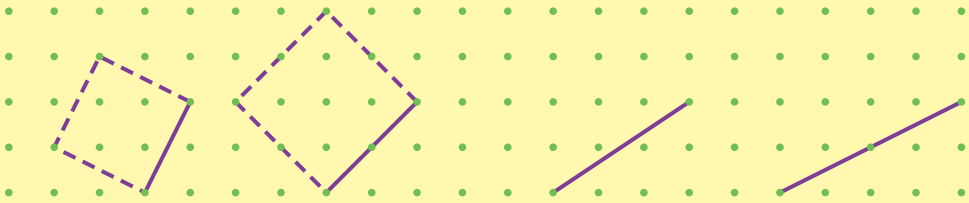
Predict the area for the squares based on a 20/1 line segment (*along* 20 *up* 1).

Have you a simple strategy for making your predictions?
Have you a simple method for working out the areas?

How can you describe the square whose area is 122 sq. units?
What about a square of area 2501 sq. units?

'Two tilt' squares

Complete the squares and find their areas.



What do you notice from your results this time?

Test out your theory with a square based on an 8/2 line segment and other line segments from the *n*/2 set.

Predict the area for the square based on a 20/2 line segment.

Does your simple strategy for making your predictions still hold true?
Does your simple method for working out the areas still work?

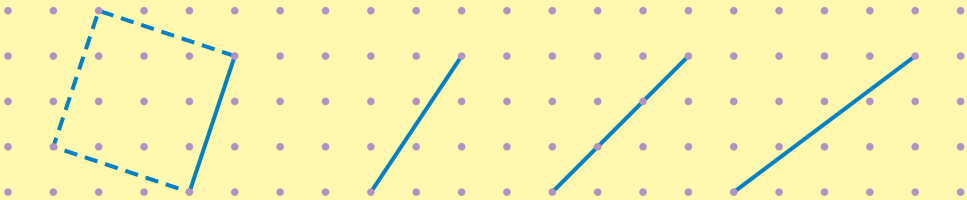
How can you describe the square whose area is 260 sq. units?
What about a square of area 580 sq. units?

What observations, thoughts and conclusions can you now offer?

Tilted squares

‘Three tilt’ squares

Complete the squares and find their areas.



What do you notice from your results this time?

Test out your theory with a square based on an 8/3 line segment and other line segments from the *n*/3 set.

Predict the area for a square based on a 20/3 line segment.

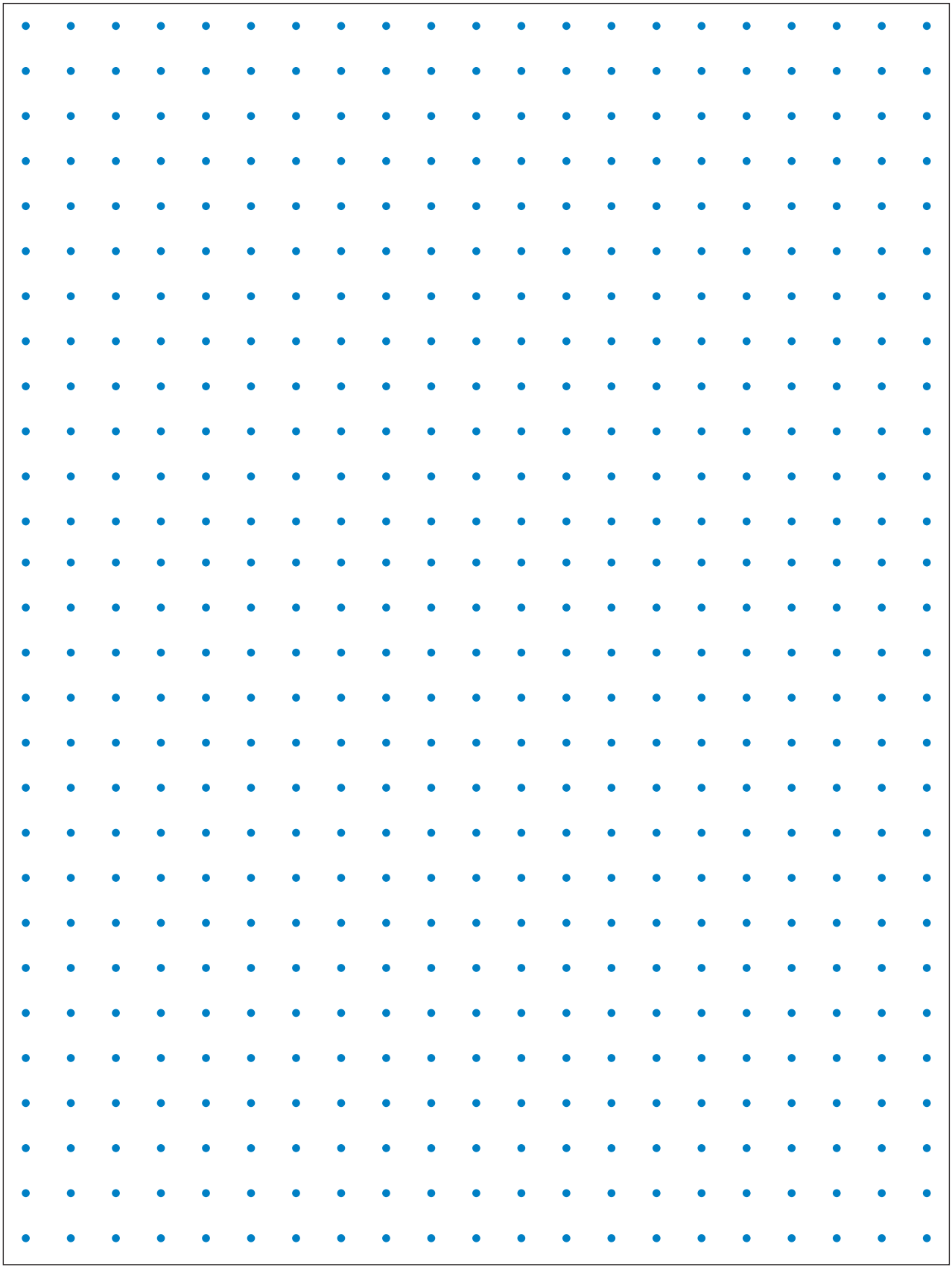
Does your simple strategy for making your predictions still hold true?
Does your simple method for working out the areas still work?

How can you describe the square whose area is 153 sq. units?
What about a square of area 3145 sq. units?

What observations, thoughts and conclusions can you now offer?

Tilted squares: dotty grid

Resource sheet



Tilted squares for dotty grid

Resource sheet

Copy this sheet onto an acetate sheet and cut out the squares. The squares are drawn to fit on the dotty square grid. The number in the corner of each square indicates the amount of 'tilt' it has been given: 1 means a 'one tilt' square.