Perpendicular Lines

Quickfire Questions

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| Gradient | Gradient of Perpendicular Line |
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Problems

1. A line is goes through the point (9,10) and is perpendicular to another line with equation . What is the equation of the line?

2. A line goes through the points and . A second line is perpendicular to and passes through point B. Where does cross the x-axis?

3. Are the following lines parallel, perpendicular, or neither?

Test Your Understanding

1. A line goes through the point (4,7) and is perpendicular to another line with equation . What is the equation of the line? Put your answer in the form , where are integers.

2. Determine the point .

Extension

1. *[MAT 2004 1D]*

What is the reflection of the point in the line ?

2. *[MAT 2014 1D]* The reflection of the point in the line has coordinates: (in terms of )

3. *[STEP I 2004 Q6]* The three points have coordinates and , respectively. Find the point of intersection of the line joining to the midpoint of , and the line joining to the midpoint of . Verify that this point lies on the line joining to the midpoint of .

The point has coordinates . Show that if the line intersects the line at right angles, then , and write down a similar result if the line intersects the line at right angles.

Deduce that if is perpendicular to and also is perpendicular to , then is perpendicular to .

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