**Finding Gradients from Coordinates**

Find the gradients of the straight lines through these pairs of points.

**(a)** (0, 0) and (2, 8)

**(b)** (0, 0) and (8, 2)

**(c)** (3, 0) and (5, 6)

**(d)** (3, 0) and (5, 5)

**(e)** (0, 8) and (4, 0)

**(f)** (1, 5) and (3, 1)

**(g)** (1, 5) and (3, -1)

**(h)** (3, 3) and (9, -3)

**(i)** (2, 4) and (-2, 16)

**(j)** (4, 4) and (-8,-2)

**(a)** A line with a gradient of 3 passes through the points (2, 6) and (4, $a$). Find the value of $a$.

**(b)** A line with gradient -2 passes through the points (5, 5) and ($b$, 9). Find the value of $b$.

**(c)** A line with gradient ½ passes through the points ($c$, 8) and (-1, 5). Find the value of $c$.

**(a)** Find the gradient of the line joining the points (4, 5) and (6, 5). What is the equation of this line?

**(b)** Find the gradient of the line joining (9, -1) and (9, 5). What is the equation of this line?

Point A has coordinates$ (4, 6)$. Point B has coordinates $(a, b)$. $a$ is a positive integer less than four. $b$ is a prime number less than 10. How many gradients for the line AB can you find?

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