

National 5: Straight Line

Q1 Find the equation of the straight line through the given point with the given gradient.

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|------------------------|----------------------|-----------------------|
| a) $(3, 7)$ $m = 2$ | b) $(1, -2)$ $m = 3$ | c) $(6, -1)$ $m = 1$ |
| d) $(1, 6)$ $m = 0$ | e) $(3, 1)$ $m = -2$ | f) $(1, 5)$ $m = -4$ |
| g) $(-1, -1)$ $m = -4$ | h) $(0, -1)$ $m = 3$ | i) $(-2, 6)$ $m = -3$ |

Q2 Find the equation of the straight line through the given point with the given gradient.

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|---------------------------------|---------------------------------|----------------------------------|
| a) $(4, 1)$ $m = \frac{1}{2}$ | b) $(4, -3)$ $m = \frac{3}{2}$ | c) $(5, 3)$ $m = -\frac{1}{2}$ |
| d) $(2, -1)$ $m = -\frac{4}{3}$ | e) $(-4, 2)$ $m = \frac{2}{3}$ | f) $(-5, 0)$ $m = -\frac{7}{4}$ |
| g) $(1, 7)$ $m = \frac{2}{5}$ | h) $(-3, -1)$ $m = \frac{1}{4}$ | i) $(-3, -2)$ $m = -\frac{4}{5}$ |

Q3 Find the equation of the straight line through the two given points.

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| a) $(1, 3)$ and $(3, 7)$ | b) $(2, -1)$ and $(5, 8)$ | c) $(-1, 7)$ and $(2, 4)$ |
| d) $(0, -1)$ and $(-3, 5)$ | e) $(3, -1)$ and $(1, -9)$ | f) $(-4, -3)$ and $(-2, 7)$ |
| g) $(-5, -2)$ and $(3, 6)$ | h) $(1, -2)$ and $(5, -2)$ | i) $(-1, 0)$ and $(-2, 3)$ |

Q4 Find the equation of the straight line joining the two given points.

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|----------------------------|----------------------------|----------------------------|
| a) $(4, 5)$ and $(6, 6)$ | b) $(1, -1)$ and $(3, 2)$ | c) $(1, 6)$ and $(-2, 4)$ |
| d) $(1, -2)$ and $(-3, 3)$ | e) $(2, 0)$ and $(5, -5)$ | f) $(-1, 3)$ and $(-4, 7)$ |
| g) $(-5, -2)$ and $(3, 1)$ | h) $(1, -2)$ and $(4, -3)$ | i) $(-1, 0)$ and $(-4, 2)$ |

Q5 Each of the following equations represents a straight line. Identify the gradient and y-intercept.

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|-------------------|----------------------|----------------------|
| a) $2x + y = 3$ | b) $3x + y + 1 = 0$ | c) $-2x + y - 3 = 0$ |
| d) $2y = x + 4$ | e) $3y = -x + 3$ | f) $-y = 2x + 3$ |
| g) $-2y = x + 6$ | h) $-3y = -x + 12$ | i) $-2y = 2x - 3$ |
| j) $2y = 3x + 6$ | k) $3y = -2x + 3$ | l) $-4y = 3x - 1$ |
| m) $5y = 4x$ | n) $4y = 5$ | o) $x - y = 0$ |
| p) $7y + 4x = 0$ | q) $2x - 3y = 0$ | r) $2x + 3y = 0$ |
| s) $-2x + 5y = 0$ | t) $2x + 3y = 1$ | u) $4x + 5y = 2$ |
| v) $-7x + 4y = 3$ | w) $7x + 3y + 4 = 0$ | x) $3x - 2y - 5 = 0$ |