GRADIENT OF A STRAIGHT LINE

1 Find the gradient of the line containing the given points.

(a) $(2,4), (0,6)$ **(b)** $(-3,-1), (-5,6)$ **(c)** $(-2,2), (-6,2)$ **(d)** $(2,-3), (-3,2)$

2 Calculate the angle of inclination of the line joining the given points.

(a) $(-4,-2), (4,6)$ **(b)** $(0,5), (-2,4)$ **(c)** $(-5,6), (3,3)$

3 Calculate the gradients of the lines joining the points $(-2,3)$ and $(4,-2)$ and the points $(-1,7)$ and $(-7,12)$. These two lines are:

A parallel **B** perpendicular **C** intersecting **D** coincident

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4 For each of the following, show that $ABCD$ is a parallelogram.

(a) $A(0,0), B(3,0), C(5,5), D(2,5)$

(b) $A(-3,-1), B(4,1), C(8,5), D(1,3)$

6 Show that the points $(-2,0)$, $(2,12)$ and $(-5,-9)$ are collinear.

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7 For the points $A(2a, b)$, $B(a, 2b)$ and $C(-a, 4b)$, indicate whether each statement is correct or incorrect.

(a) $AB = BC$ **(b)** $AB + BC = AC$ **(c)** $AB \perp BC$ **(d)** A, B and C are collinear

8 For each of the following, show that ABC is a right-angled triangle.

(a) $A(2, -3)$, $B(5, 2)$, $C(-3, 0)$ **(b)** $A(-1, 2)$, $B(3, 4)$, $C(7, -4)$