

Triangle PQR has vertices at $P(-3, -2)$, $Q(-1, 4)$ and $R(3, 6)$.

PS is a median. What is the gradient of PS?

A -2

B $-\frac{7}{4}$

C 1

D $\frac{7}{4}$

Here are two statements about the points $S(2, 3)$ and $T(5, -1)$:

(1) The length of $ST = 5$ units;

(2) The gradient of $ST = \frac{4}{3}$.

Which of the following is true?

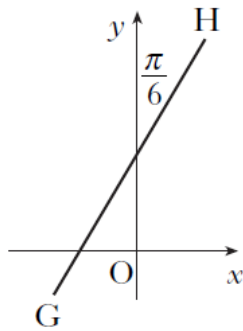
A Neither statement is correct.

B Only statement (1) is correct.

C Only statement (2) is correct.

D Both statements are correct.

The line GH makes an angle of $\frac{\pi}{6}$ radians with the y-axis, as shown in the diagram.
 What is the gradient of GH?



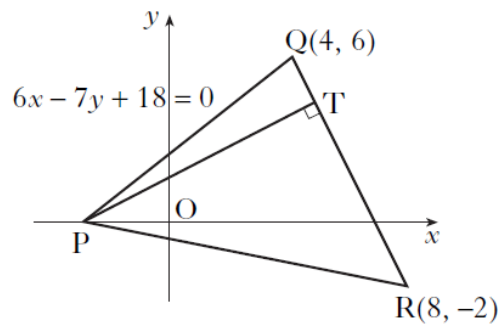
- A $\sqrt{3}$
- B $\frac{1}{2}$
- C $\frac{1}{\sqrt{2}}$
- D $\frac{\sqrt{3}}{2}$

Triangle PQR has vertex P on the x-axis, as shown in the diagram.

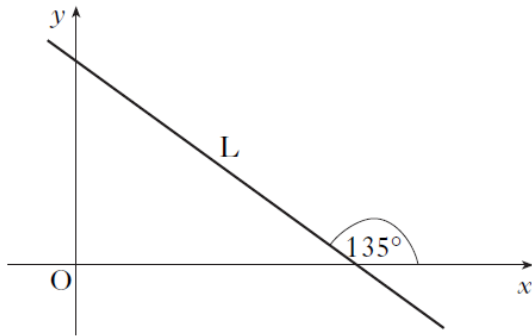
Q and R are the points (4, 6) and (8, -2) respectively.

The equation of PQ is $6x - 7y + 18 = 0$.

- (a) State the coordinates of P. 1
- (b) Find the equation of the altitude of the triangle from P. 3
- (c) The altitude from P meets the line QR at T. Find the coordinates of T. 4



The diagram shows a line L; the angle between L and the positive direction of the x -axis is 135° , as shown.



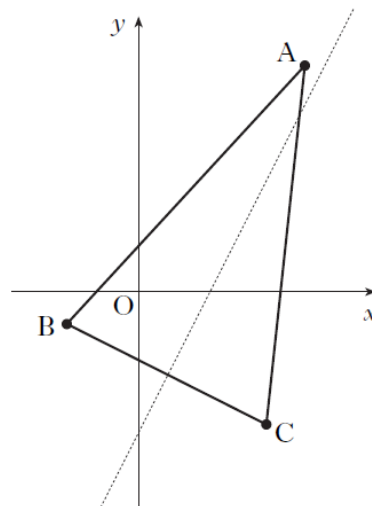
What is the gradient of line L?

- A $-\frac{1}{2}$
- B $-\frac{\sqrt{3}}{2}$
- C -1
- D $\frac{1}{2}$

The vertices of triangle ABC are A(7, 9), B(-3, -1) and C(5, -5) as shown in the diagram.

The broken line represents the perpendicular bisector of BC.

- (a) Show that the equation of the perpendicular bisector of BC is $y = 2x - 5$.
- (b) Find the equation of the median from C.
- (c) Find the coordinates of the point of intersection of the perpendicular bisector of BC and the median from C.



4
3
3

Find the equation of the line through the point (-1, 4) which is parallel to the line with equation $3x - y + 2 = 0$.

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