

- 3** The equation of a curve is $y = (x - 3)\sqrt{x + 1} + 3$. The following points lie on the curve. Non-exact values are rounded to 4 decimal places.

$A(2, k)$ $B(2.9, 2.8025)$ $C(2.99, 2.9800)$ $D(2.999, 2.9980)$ $E(3, 3)$

- (a)** Find k , giving your answer correct to 4 decimal places. [1]

.....

.....

.....

.....

- (b)** Find the gradient of AE , giving your answer correct to 4 decimal places. [1]

.....

.....

.....

.....

.....

.....

The gradients of BE , CE and DE , rounded to 4 decimal places, are 1.9748, 1.9975 and 1.9997 respectively.

- (c)** State, giving a reason for your answer, what the values of the four gradients suggest about the gradient of the curve at the point E . [2]

.....

.....

.....

.....

.....

.....

.....

.....