4 $ABCD$ is a trapezium where A is the point $(1, -2)$, B is the point $(7, 1)$ and C is the point $(3, 4)$

DC is parallel to AB.

AD is perpendicular to AB.

4 (a) (i) Find the equation of the line CD.

[2 marks]

4 (a) (ii) Show that point D has coordinates $(-1, 2)$

[3 marks]

4 (b) (i) Find the sum of the length of AB and the length of CD in simplified surd form.

[2 marks]

4 (b) (ii) Hence, find the area of the trapezium $ABCD$.

[2 marks]