Three consecutive terms of an arithmetic sequence are $x - 3$, $12$, $3x - 5$

Find $x$

Find the common difference

$$U_2 - U_1 = 12 - (x - 3)$$
$$= 15 - x$$

$$U_3 - U_2 = 3x - 5 - 12$$
$$= 3x - 17$$

$$3x - 17 = 15 - x$$
$$4x = 32$$
$$x = 8$$

Check that the result makes sense.
Substitute into orginal expressions

$$x - 3, 12, 3x - 5$$
$$5, 12, 19$$

Arithmetic sequence with d = 7