1. Express as a single fraction in its simplest form

$$\frac{5}{x} - \frac{3}{(x-2)}, \quad x \neq 0 \quad \text{or} \quad x \neq 2$$

(3)

2. A is the point (a^2, a)

    T is the point (t^2, t) $a \neq t$

    Find the gradient of the line AT

    (3)

    Give your answer in its simplest form.

N5 Unit 1 Spot Test 3

1. $\dfrac{5}{x} - \dfrac{3}{x-2}$

$$= \frac{5(x-2)}{x(x-2)} - \frac{3x}{x(x-2)} \quad \checkmark$$

adjust for both the denominators ✓

common factor

$$= \frac{5x - 10 - 3x}{x(x-2)}$$

$$= \frac{2x - 10}{x(x-2)} \quad \checkmark$$

2. $m_{AT} = \dfrac{y_2 - y_1}{x_2 - x_1}$ $A(a^2, a)$ $T(t^2, t)$

$$= \frac{t - a}{t^2 - a^2} \quad \checkmark$$

$$= \frac{t - a}{(t-a)(t+a)} \quad \checkmark$$

$$= \frac{1}{t + a} \quad \checkmark$$