5. The curve *C* has parametric equations

$$x = \frac{t-1}{2} \qquad y = 5(t+2)^4 \qquad t \in \mathbb{R}$$

The point *P* with *x* coordinate –3 lies on *C*.

(a) Find the *y* coordinate of *P*.

(2)

(b) Find a Cartesian equation for *C*, giving the answer in the form $y = f(x)$

(2)

(c) Hence, or otherwise, find the gradient of *C* at the point *P*.

(3)