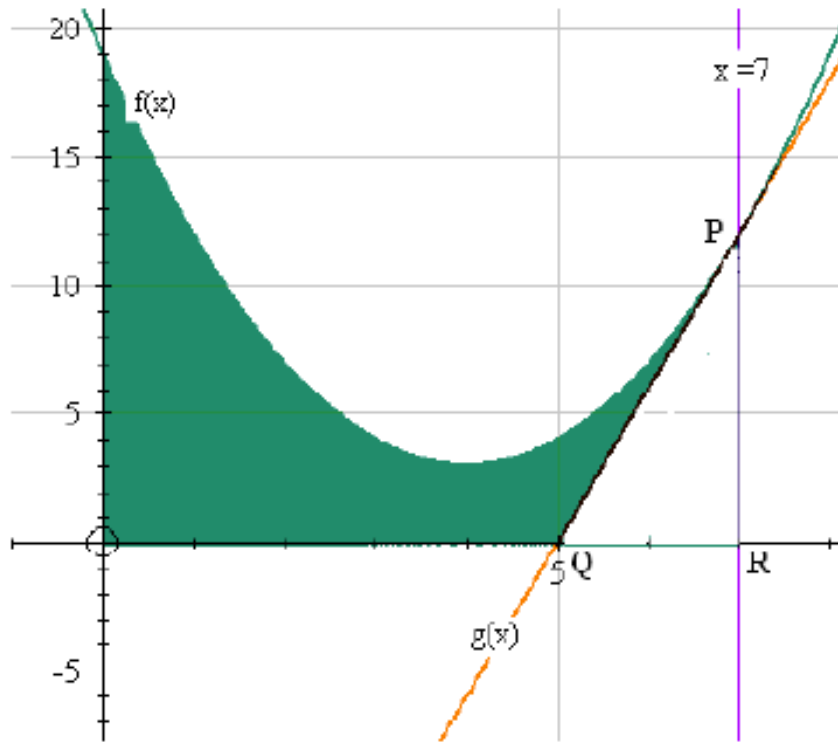


2.) The graph of the function $f(x) = (x - 4)^2 + 3$ and its tangent $g(x)$.



(a) Find $f'(x)$

[2 marks]

(b) Hence find the gradient of the function $f(x)$ at $x = 7$ and also find the equation of the tangent at $(7, 12)$

[3 marks]

(c) Find the equation of the normal of the tangent at the same point $(7, 12)$ [2 marks]

NAME: _____

DATE: 10/18/2017

Answer key (show all calculations for full marks).

1.) $f'(x) = 10x$

Tangent's equation: $y = 20x - 20$

Normal's equation: $y = \frac{-x}{20} + \text{you can find the y-intercept; I believe in you!}$

2.) $f'(x) = 2x - 8; f'(7) = 6$

Tangent's equation: $y = 6x - 30$

Normal's equation: $y = \frac{-x}{6} + \frac{79}{6}$