

$$\textcircled{27} \quad f(x) = x^3 \quad (2, 8) \quad (y-8) = 12(x-2)$$

$$f'(x) = 3x^2$$

$$f'(2) = 3(2)^2 = 12$$

$$\textcircled{33} \quad f(x) = x^3 \quad 3x - y + 1 = 0$$

$$f'(x) = \underline{3x^2}$$

$$y = \underline{3x - 1}$$

$$3x^2 = 3$$

$x = \pm 1 \rightarrow$  two points of tangency that satisfy  
the lines being  $\parallel$  to  $y = 3x - 1$   
 $(1, 1)$  and  $(-1, -1)$

$$(y-1) = 3(x-1)$$

$$(y+1) = 3(x+1)$$

58  $f(x) = x^2$   
 $f'(x) = 2x$

can be written as  $(x, x^2)$

line A  
 $(y-1) = -2(x+1)$

line B  
 $(y-9) = 6(x-3)$

$$2x = \frac{y+3}{x-1}$$

$$2x = \frac{x^2+3}{x-1}$$

$$2x^2 - 2x = x^2 + 3$$

$$x^2 - 2x - 3 = 0$$

$$(x-3)(x+1) = 0$$

$$x = -1 \quad x = 3$$