(b) f(-2) = -2+9

= 7.



1. Given that f(x) = x + 9(a) Find f(6)(b) Find f(-2)(c) Solve f(x) = 12

(1 mark) (1 mark) (2 marks)

- (a) f(b) = 6+9 = 5 ·
- $\begin{array}{c} (c) \quad x + q = 12 \\ x = 3. \end{array}$

2. Given that 
$$f(x) = 3x + 2$$
  
(a) Find  $f(3)$   
(b) Find  $f(-4)$   
(c) Solve  $f(x) = 14$   
(c) Solve  $f(x) = 3(3) + 2$   
 $= 9 + 2$   
 $= 14$   
(c)  $f(-4) = 3(-4) + 2$   
 $= -12 + 2$   
 $= -12 + 2$   
 $= -12 + 2$   
 $= -10$   
(c)  $3x + 2 = 14$   
(c)  $f(-4) = 3(-4) + 2$   
 $= -12 + 2$   
 $= -10$ 



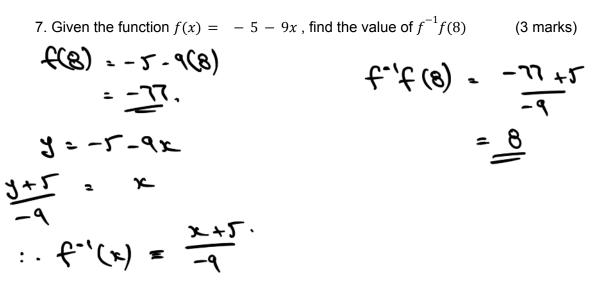
3. Given that $f(x) = 3x^2 + 4$ (a) Find $f(3)$ (b) Find $f(-3)$ (c) Solve $f(x) = 16$ (c) $f(3) = 3(3)^{2} + 4$ = 3(4) + 4 = 3(4) + 4	(2 marks) (2 marks) (3 marks) $= 3(-3)^{-} + 4$ = 3(-3) + 4 = 3(-3) + 4
4) 3x++4=16	
$3x^{\perp} = 12$	
x 2 2 4	
$x = \pm 2$ .	
4. Given that $g(x) = x^2 + 5$ (a) Find $g(8)$ (b) Find $g(-6)$ (c) Work out the expression for $g^{-1}(x)$ (d) Find $g^{-1}(x) = 4$	(1 mark) (1 mark) (2 marks) (2 marks)
(a) g(8) = 8 + 5 ·	(b) g(-6) = (-6) +5.
= 69	2 <u>41</u>
(e) J= k +5	(&) g <sup>-1</sup> (x) = 4.
y-5 = x-4	JR-5 = 4
vy-5 - x	x - 5 = 16
g" (k) = Jk -5	



5. Given that f(x) = 3x + 2 and g(x) = 2x - 6(a) Find gf(3) (2 marks) (b) Solve f(x) = g(x) (2) 3x + 2 = 2x - 6(a) f(3) = 3(3) + 2 (b) 3x + 2 = 2x - 6 x + 1 = -6 gf(3) = 1(11) - 6 x = -8= 16

6. Given that f(x) = 2x - 2 and g(x) = x + 3(a) Work out the expression for  $f^{-1}(x)$ (2 marks) (b) Work out the expression for  $q^{-1}(x)$ (2 marks) (c) Solve  $f^{-1}(x) = g^{-1}(x)$ (2 marks)  $(c) \xrightarrow{R+2} = R^{-3}$ (a) y= 2x - 2. y+2 2 Lx x+2 = 2(x-3) $\frac{J+L}{L} = K$   $f^{-1}(k) = \frac{k+2}{L}$ x+L=Lx-6 2 = x - 68 = r (と) リ= チャン :. x=8 y-3 = x9"(x) = x-3





8. A function f is defined such that  $f(x) = \frac{x}{x-2}$ (a) Find the value of  $f(\frac{5}{2})$ 

(2 marks)

(b) Find 
$$f^{-1}(x)$$
  
(c)  $f(x) = \frac{1}{\frac{1}{2} - 2}$   
(d)  $f(x) = \frac{1}{\frac{1}{2} - 2}$   
(e)  $f(x) = \frac{1}{x - 2}$   
 $f(x - 1) = x$   
 $f(x - 1) = x$