End of Unit Test Name: Answers

Simplifying and Substituting - HIGHER

1) (a) Factorise $x^2 + 10x + 24$

Answer $(x+6)(x+4)$

(2)

(b) Hence or otherwise, solve $x^2 + 10x + 24 = 0$

Answer $x = -6$ or -4

(1)

(Total 3 marks)

3) (a) Expand and simplify $(6x - 1)(2x + 3)$

$12x^2 + 18x - 2x - 3$

Answer $12x^2 + 16x - 3$

(2)

(b) Solve $4x^2 + x - 3 = 0$

$(4x-3)(x+1)$

	x	1
$4x$	$4x^2$	$+4x$
-3	$-3x$	-3

Answer $x = 3/4$ or -1

(3)

(Total 5 marks)

3) Simplify $\frac{4x^2-1}{4x^2+12x+5}$

$\frac{(2x+1)(2x-1)}{(3x+1)(2x+5)}$

	$2x$	5
$2x$	$4x^2$	$10x$
1	$2x$	5

Answer $\frac{2x-1}{2x+5}$

(Total 3 marks)

4) Expand and simplify (2x 5)(2x 5)(3x 7)

$(4x - 10x + 10x - 25)(3x + 7)$

	$3x$	$+7$
$4x$	$12x$	$28x$
25	-75	-175

A we $12x^3 + 28x^2 - 75x - 175$

(T tal 3 m k)

5) F r all values of x f( ) x 1 and g(x) x 5

(a) Sh w th f fg(x) x^2 10 26

$fg(x) = (x - 5) + 1$

$x^2 - 5x - 5x + 25 + 1$

$- x^2 - 10x + 26$

(2)

(b) Solve fg(x) gf(x)

$gf(x) = (x^2 + 1) - 5 \quad x^2 - 4$

$x^2 - 10x + 26 \quad x^2 - 4$

$-10x + 30 \quad 0$

$30 \quad 10x$

$3 \quad x$

x 3

(4)

(Total 6 marks)

(Total for test 20 marks)