Name:

Teacher's name:

Year 11 Common Mathematics Test 1 Term 1 2004

Time: 55 minutes

50 marks

lm

1. Evaluate, giving your answer correct to 3 sig figs: $\sqrt{2.3^3 + 5.7^4}$

 $\frac{\sqrt{2.3^3 + 5.7^4}}{3 \times 2.4 \times 50}$

2. (a) The profit of a company rose by 3% to \$1,354,652. Find the profit of the company before the rise.

(b) The population of rats in Toogaloo is 4.6×10^4 . If they each eat 5.8 kg of scraps per day, find the total amount they consume in a year. Give your answer in scientific notation correct to 2 sig figs.

3 m 3. Expand and simplify the following:

(b) $(2x-3)^2$

(c) (p-qw)(p+qw)

(a) (x-3)(x+5)

4. Simplify the following:

(a) 8x - (x-1)(x+1)

6m

8m

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

5. Factorise the following:

(a)
$$A^3 - 2A^2$$

(b)
$$x(x-p)-y(x-p)$$

(c)
$$x^2 = 6x + 8$$

(d)
$$1-r^2$$

6. Solve the following equations for x:

$$\frac{x+3}{x+2} = \frac{2}{3}$$

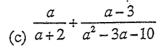
(b)
$$(x-4)(x+1)=0$$

(c)
$$x^2 = 3x$$

7m

3m

7. (a) Solve by completing the square, leaving your answer in surd form: $x^2-4x-1=0$



(b) Solve the equation giving your answer correct to 2 decimal places: $x^2 = 5x - 1$

$$(b) x^2 - (y-4)^2$$

9. Factorise:

(a) $p^3 - 8$

10. Solve for x: (x+2)(x-2)+(x-3)(x+1)=5

8. Simplify the following:

$$\frac{1}{(a)} \frac{1}{x_T y} - \frac{1}{y - x}$$

ANSWERS TO ST CATHERINE'S COLLEGE – YR 11 - 2004 TERM 1 ASSESSMENT

1	9.8×10 ⁻²	2 a	\$1315196.10	b	9.7×10 ⁷	3 a	$x^2 + 2x - 15$	b	$4x^2 - 12x + 9$
c	$p^2 - q^2 w^2$	4 a			$\frac{5x-5}{6}$, ,	b	(x-y)(x-p)
C	(x-1)(x-4)	d	(1+r)(1-r)	6 a	x = -13	b	$x^2 - 3x - 4$	c	x = 0 or 3
7 a	$x = 2 \pm \sqrt{5}$	b	4.79 or 0.21	8 a	$\frac{2}{x-y}$	b	$\frac{(a-3)(a-1)}{(a+2)(a-5)}$	9 a	$(p-2)(p^2+2p+4)$
b	(x+y-4)(x-y+4)	10	x = -2 or 3						,

8/03/06