

OUR LADY OF GOOD COUNSEL SSS
S.5 HOLIDY WORK PURE MATHEMATICS

P425/1

1. Solve the simultaneous equations

$$x - 2y - 2z = 0$$

$$2x + 3y + z = 1$$

$$3x - y - 3z = 3$$

2. Solve the equation $\log_2 x - \log_x 8 = 2$

3. Without using a mathematical table or calculator, find the value of

$$\frac{(\sqrt{5}+2)^2 - (\sqrt{5}-2)^2}{8\sqrt{5}}$$

4. Solve for x and y in the following simultaneous equation.

$$(x - 4y)^2 = 1$$

$$3x + 8y = 11$$

5. Solve for m in the equation $4^{2m} - 4^{m+1} + 4 = 0$

6. Eliminate θ from the following equations.

a. $x = a \cos \theta, y = b \sin \theta$

b. $x = a \sec \theta, y = b + c \cos \theta$

c. $x = \sec \theta + \tan \theta, y = \sec \theta - \tan \theta$

7. Solve the following equations for values of θ from 0° to 360° inclusive.

a. $2\cos^2\theta + \sin\theta = 1$

b. $3\sin^2\theta - \sin\theta \cos\theta - 4\cos^2\theta = 0$

c. $2\tan^2\theta + \sec\theta = 1$

8. Solve the following simultaneous equations

a. $6\log_3 x + 6\log_{27} y = 7$

$$4\log_9 x + 4\log_3 y = 9$$

b. $y \log_2 8 = x$

$$2^x + 8^y = 8192$$

END