C.E.M. TUITION

Student Name :_____

Review Topic : Basic Arithmetic and Algebra

(Preliminary Course - Paper 1)

Year 11 - 2 Unit

TUTOR : PETER OOI

PHONE : 666-3331   **FAX : 316-4996**

Question 1

(a) Solve the quadratic equation $5x^2 - 2x - 3 = 0$

(b) Express as a rational number :

(i) $\dfrac{\sqrt{32} - \sqrt{8}}{3\sqrt{2}}$ (ii) $25^{-\frac{1}{2}}$

Question 2 :

(a) Express $\dfrac{1}{4-\sqrt{13}}$ in the form $a+b\sqrt{13}$, where a, b are rational numbers.

(b) Solve the equation $\dfrac{1}{3}\,(x+7) - \dfrac{1}{6}\,(x-2) = 2$

(a) $\frac{4}{3}+\frac{1}{3}\sqrt{13}$ (b) -4

Question 3 :

(a) Express as a single fraction in its simplest form $\frac{2x-3}{2} - \frac{x-1}{5}$.

(b) Find the exact value of $49^{-\frac{1}{2}} \times 27^{\frac{2}{3}}$

(a) $\frac{8x-13}{10}$ (b) $\frac{9}{7}$

Question 4 :

(a) Solve the simultaneous equations : $a + 3d = 1$, $a + 53d = 101$.

(b) Solve the quadratic equation : $3x^2 = 5x - 2$

(a) $a = -5, d = 2$ (b) $x = \frac{2}{3}$ or 1

Question 5 :

(a) Solve the equation $2(x+3) = 3(x-1)$

(b) For what values of x is $2x^2 \geq x$?

(c) For what values of x is $x^2 \geq (x+1)(x+2)$?

(a) $x = 9$ (b) $x \leq 0$ or $x \geq \frac{1}{2}$ (c) $x \leq -\frac{2}{3}$

Question 6 :

(a) Solve the quadratic equation $x(2x - 3) = 5$

(b) Solve the equation $\frac{1}{2}(x + 2) - \frac{1}{5}(x - 3) = 1$

(c) Factorize completely : $3x^2 - 12y^2$

(a) $\frac{5}{2}$ or -1 (b) $x = -2$ (c) $3(x - 2y)(x + 2y)$