Note: Attempt all questions.

Q1. Solve the inequalities and show the solution sets on the real line:

(a) $3(2-x) > 2(3+x)$

(b) $-\dfrac{x+5}{2} \leq \dfrac{12+3x}{4}$

Q2. Express the solution sets as intervals or unions of intervals and show them on the real line:

(a) $4 < x^2$

(b) $4 < x^2 < 9$

Q3. It is estimated that the annual cost of driving a certain new car is given by the formula

$$C = 0.35m + 2200$$

where m represents the number of miles driven per year and C is the cost in dollars. Jane has purchased such a car and decides to budget between \$6400 and \$7100 for next year's driving costs. What is the corresponding range of miles that she can drive her new car?

Q4.(a) Solve the quadratic inequality $4x^2 + x + 1 > 0$

(b). Solve the absolute value inequality $|3x+2| \geq 4$.

The End