

Term Test C version 2

- (1) [5 points] Solve the following system of equations by elimination,

$$y = -\frac{6}{7}x - \frac{18}{7} \quad \left(\frac{1}{2}, -3\right) \quad (1)$$

$$-2x + 3y = -10 \quad (2)$$

- (2) [5 points] A quarter (worth 25 Canadian cents) has a thickness of 1.58mm. The distance from the Earth to the International Space Station is 354km. Calculate in scientific notation how much money you would need to build a tower of quarters to the International Space Station. Give your final answer in non-scientific form.

\$56,012,658

- (3) [5 points] Find the inverse of the following matrix,

$$A = \begin{bmatrix} -6 & 5 \\ -5 & 4 \end{bmatrix}$$

$$A^{-1} = \begin{bmatrix} 4 & -5 \\ 5 & -6 \end{bmatrix} \quad (3)$$

- (4) [5 points] Solve the equation.

$$\frac{4+x}{2} - \frac{3x-2}{5} = 2$$

$$S = \{4\} \quad (4)$$

- (5) [5 points] The shortest side of a right-angled triangle is 8cm shorter than its hypotenuse. The difference in length of the other two sides (the two sides that are not the hypotenuse) is 7cm. Find the length of the hypotenuse.

$$7y = -6x - 18$$

$$-2x + 3y = -10$$

$$S = \left\{\left(\frac{1}{2}, -3\right)\right\}$$



$$\begin{bmatrix} -6 & 5 \\ -5 & 4 \end{bmatrix} \begin{bmatrix} 4 & -5 \\ 5 & -6 \end{bmatrix}$$