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1.

i $2x + 4y + -52 - 8x - 4y + 22 + 4x - 7y + 8$
 $= x - 12y + 52$ (5)

ii $x(x+2) - (x-4)$
 $x^2 + 2x - x + 4$
 $x^2 + x + 4$ (5)

(50
100)

iii $3p^2qr \times 4p^3q^3 \times 5qr$
 $60p^4q^5r^3$

iv $\frac{6p^2q^3r}{3p^3q^3r^{-2}} = 2p^{-1}r^{-1}$ (0)

v $\frac{28g}{16h} \times \frac{4gh^2}{48h} \times \frac{328h^3}{128^3}$

$\frac{88g^2h^2}{1648h^2} \times \frac{328h^3}{128^3}$

$\frac{2868^2g^2h^5}{7688^4h^2}$
 $= \frac{1}{3}8^{-2}g^2h^3$ (5)

Q2:

i $5(x-3) = 2(x+6)$
 $5x - 15 = 2x + 12$
 $3x = 27$
 $x = 9$ (10)

ii $\frac{(x+6)}{2} = x + \frac{2x-5}{3}$
 $3(x+6) = 2x + 2(2x-5)$
 $3x + 18 = 4x - 10$
 $x = 28$ (10)

Q3

$$2x + 4y = 16$$

$$3x + 2y = 7$$

$$6x + 4y = 14$$

$$4y = 14 - 6x$$

$$2x + 14 - 6x = 16$$

$$-4x = 2$$

$$-x = \frac{1}{2} \quad -x = \frac{1}{2}$$

$$x = -\frac{1}{2}$$

(10)

$$2(-\frac{1}{2}) + 4y = 16$$

$$-1 + 4y = 16$$

$$4y = 17$$

$$y = \frac{17}{4}$$

$$3(-\frac{1}{2}) + 2y = 7$$

$$-1.5 + 2y = 7$$

$$2y = 8.5$$

$$y = 4.25$$

Q.4. $A = \begin{bmatrix} 1 & 1 & 6 \\ 1 & 2 & 2 \\ 1 & 3 & -1 \end{bmatrix}$

$$A^{-1} = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 6 & 2 & -1 \end{bmatrix}$$

$$1 \times 10^2 + 4 + 8$$

$$14 \quad 0 \quad -1 \quad 1 \quad 2$$

-B

$$C. \begin{bmatrix} 1 & 1 & 2 \\ 1 & 1 & 5 \end{bmatrix}$$

+1

$$G. \begin{bmatrix} 1 & 1 & 6 \\ 2 & 2 & 2 \end{bmatrix}$$

-10

$$h \quad -1 \quad 1 \quad 6 \quad 2$$

-4

$$i \quad 1 \quad 1 \quad 2$$

(0)

+A+1

$$4 \times 11 \quad 8 - 3 + 14 + 7$$

$$8, -3, 1$$

$$-14, 7, -2$$

$$-10, -4, 1$$

$$A^{-1} = \begin{bmatrix} -8 & 14 & -10 \\ 3 & -7 & 4 \\ 1 & -2 & 1 \end{bmatrix}$$

$$5. \quad 1x + 1y + 6z = 1$$

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

$$1x + 3y - 1z = 4$$

$$1x = 1 - y - 6z$$

$$\cancel{2y} \quad 1 - y - 6z + 2y + 2z = 2$$

$$1 - y - 6z + 3y - 2z = 4$$

$$1 + 2y - 4z = 2$$

$$1 + 2y - 7z = 4$$

$$y - 4z = 1$$

$$2y - 7z = 3$$

$$- \quad 2y - 8z = 2$$

$$2y - 7z = 3$$

$$z = 1$$

$$y - 4 = 1$$

$$y = 5$$

$$\begin{array}{l} y - 4z = 1 \\ 2y - 7z = 3 \\ 2y - 8z = 2 \\ 2y = 10z \\ 2 = 2z \\ z = 1 \\ y - 4 = 1 \\ y = 5 \end{array}$$

0

$$x + 5 + 6(1) = 1$$

$$x = -10$$

$$\begin{bmatrix} -10 & 5 & 6 \\ -10 & 10 & 2 \\ -10 & 15 & -1 \end{bmatrix} = \begin{bmatrix} 1 \\ 2 \\ 4 \end{bmatrix}$$

$$6. \quad \frac{3x+2}{2x^2-x-1}$$