2. Integers

1.	Let the number be x and y		
	$x + y = xy - 1$	B1	
	$y - x = xy - 5$		
	$x + y + 1 = xy$	B1	
	$y - x + 5 + = xy$		
	$x + y + 1 = y - x + 5$		
	$2x = 4 \quad x = 2$	B1	
	$Y - 2 + 5 = 2y = y = 3$		
		03	

2. $X > -1$

       $X \geq 3$

3. $2x\ 2^3\ x\ 8^{\,x}\ x\ 8^2 = 128$

       $2x \div 2^3\ x\ 2^3x\ x\ 8^2 = 128$

       Let 2^x be y

       $^y/_8\ x\ y^3\ x\ 64 = 128$

       $^{8y}/_8 = 128/8$

       $y^4 = 16$ M1

       $y^4 = 24$ M1

       $\therefore y = 2$ A1

                   $-5\ x\ 6 \div 2 + (-5)$

4. $-12\ -3 = 4$

       $4\ x\ 4 + 15$

       Numerator $16 + 15 = 31$

       Denominator $-5\ x\ 3 + -5 = 31$

       $-15 + -5$

       $-15 + -5$

       $= -20$

       $\dfrac{31}{-20}$

       $= -1\ ^{11}/_{20}$

5. $= \dfrac{(-8) - (-4)}{-9 + 15} + \dfrac{(-16) + (-6)}{46\ -13}$

       $= \dfrac{-12}{6} + \dfrac{-22}{33}$

       $= -2 - \dfrac{2}{3}$

       $= -2\ \dfrac{2}{3}$

6. $P^{-1} = \begin{pmatrix} 4 & -3 \\ 1 & -2 \end{pmatrix}$

       $\dfrac{-1}{5} \begin{pmatrix} 4 & -3 \\ 1 & -2 \end{pmatrix} = \begin{pmatrix} ^4/_5 & ^{-6}/_5 \\ ^1/_5 & ^1/_5 \end{pmatrix}$

       $\begin{pmatrix} ^{-4}/_5 & ^{-3}/_5 \\ ^{-1}/_5 & ^2/_5 \end{pmatrix} \quad \begin{pmatrix} -1 & 3 \\ 0 & 2 \end{pmatrix}$

$$P^{-1} R = \qquad =$$

$$= \begin{pmatrix} {}^4/_5 & {}^{-6}/_5 \\ {}^1/_5 & {}^1/_5 \end{pmatrix}$$

7. $\dfrac{-8 \div 2 + 12 \ x \ 9 - 4 \ x \ 6}{56 \div 7 \ x \ 2}$

$= \dfrac{-4 + 108 - 24}{16}$

$\dfrac{80}{16} \qquad = 5$