1-

حساب قيمة العبارة:

$(X+Y)^2=49$ و منه $X+Y=7$

نجد: $X^2+Y^2+2XY=49$

و بما أن $X^2+Y^2=10$

$2XY=39$ منه $XY=39/2$

$1/X+1/Y= Y+X/XY$
$1/X+1/Y=7*2/39$
$1/X+1/Y=14/39$

2-

حل المعادلة:

$$\frac{x+3}{2022} + \frac{x+2}{2021} + \frac{x+1}{2020} = 3$$

$2041210(x+3) + 2042220(x+2) + 2043231(x+1) = 12381979860$

$2041210x + 6123630 + 2042220x + 4084440 + 2043231x + 2043231 = 12381979860$

$6126661x + 12251301 = 12381979860$

$6126661x = 12381979860 - 12251301$

$6126661x = 12369728559$

$x = 2019$

3-

$$\frac{5}{x-1} + \frac{1}{4-3x} = \frac{3}{6x-8}$$

$$\Rightarrow \quad \frac{5}{x-1} = \frac{3}{6x-8} - \frac{1}{4-3x}$$

$$= \frac{3}{6x-8} - \frac{1}{4-3x}$$

$$= \frac{3}{6x-8} + \frac{2}{6x-8}$$

$$= \frac{5}{6x-8}$$

$$\Rightarrow \quad \frac{5}{x-1} = \frac{5}{6x-8}$$

$$\Rightarrow \quad x-1 = 6x-8$$

$$\Rightarrow \quad 5x = 7$$

$$\Rightarrow \quad \boxed{x = \frac{7}{5}}$$