p 124 q1

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1. a) Use long division to divide $x^2 + 10x - 24$ by $x - 2$. Express the result in the form $\frac{P(x)}{x-a} = Q(x) + \frac{R}{x-a}$.

b) Identify any restrictions on the variable.

c) Write the corresponding statement that can be used to check the division.

d) Verify your answer.

$x^2+10x-24 \mid x-2$

$-x^2+2x \quad\quad x+12$

$= 12x-24$

$-12x+24$

$=$

$\frac{x^2+10x-24}{x-2} = x+12 + \frac{\not{0}}{x-2}$ ✓ no need 4 this term

$x-2 \neq 0$

$x \neq 2$

(c) $x^2+10x-24 = (x-2)(x+12)$ ✓

(d) $\longrightarrow x^2+12x-2x-24 = x^2+10x-24$ ✓