Simplifying Algebraic Expressions

Simplify each expression.

1) $\dfrac{1}{p-5} + \dfrac{3}{p-2}$

2) $\dfrac{n-4}{(n-4)\,(n+1)} - \dfrac{7n+14}{(n-4)\,(n+1)}$

3) $\dfrac{(x+y)\,(3x-y)}{(3x-y)\,(2x+y)} + 3$

4) $\dfrac{t}{t^2-6t} + \dfrac{6}{2t-12}$

5) $\dfrac{5k}{(k+2)\,(k-1)} - \dfrac{k+3}{(k+3)\,(k-1)}$

6) $\dfrac{(u-v)^2}{(u-v)\,(2u+3v)} - \dfrac{(2u+3v)^2}{(u+v)\,(2u+3v)}$

Simplifying Algebraic Expressions

Answer key

Simplify each expression.

1) $\dfrac{1}{p-5} + \dfrac{3}{p-2}$

$$\dfrac{4p-17}{p^2-7p+10}$$

2) $\dfrac{n-4}{(n-4)\,(n+1)} - \dfrac{7n+14}{(n-4)\,(n+1)}$

$$\dfrac{-6n-18}{n^2-3n-4}$$

3) $\dfrac{(x+y)\,(3x-y)}{(3x-y)\,(2x+y)} + 3$

$$\dfrac{7x+4y}{2x+y}$$

4) $\dfrac{t}{t^2-6t} + \dfrac{6}{2t-12}$

$$\dfrac{4}{t-6}$$

5) $\dfrac{5k}{(k+2)\,(k-1)} - \dfrac{k+3}{(k+3)\,(k-1)}$

$$\dfrac{4k-2}{k^2+k-2}$$

6) $\dfrac{(u-v)^2}{(u-v)\,(2u+3v)} - \dfrac{(2u+3v)^2}{(u+v)\,(2u+3v)}$

$$\dfrac{-3u^2-12uv-10v^2}{2u^2+5uv+3v^2}$$