ANSWERS

Surds – Past Paper Questions

(c) Evaluate $\left(\sqrt{72}-\sqrt{2}\right)^2$.

$(\sqrt{72}-\sqrt{2})(\sqrt{72}-\sqrt{2})$

$(\sqrt{72})^2 - \sqrt{2}\sqrt{72} - \sqrt{2}\sqrt{72} + (\sqrt{2})^2$ (1)

$72 - 2\sqrt{144} + 2$ (1)

$74 - 2\times 12$

$= 50$ (1)

[3]

(c) Expand and simplify $(3+\sqrt{2})(5+\sqrt{2})$.

$15 + 3\sqrt{2} + 5\sqrt{2} + (\sqrt{2})^2$ (1)

$15 + 8\sqrt{2} + 2$

$17 + 8\sqrt{2}$ (1)

[2]

(b) Given that $p=\sqrt{5}$, $q=\sqrt{13}$ and $r=\sqrt{325}$, simplify pqr.

$\sqrt{5}\sqrt{13}\sqrt{325} \rightarrow \sqrt{25\times 13}$

$\cancel{= \sqrt{(5\times 13\times 325)}}$

$\cancel{= \sqrt{(21125)}}$

So

$= \sqrt{5}\sqrt{13}\sqrt{25\times 13}$ (1)

[2]

$\cancel{= \sqrt{25\times 169}}$

$= \sqrt{5\times 25\times 169}$

$= 5\times 13\times\sqrt{5}$

$= 65\sqrt{5}$. (1)