**Indices – Notes**

**Simplify the following, leaving answers in positive indices:**

**[a]** $\frac{5^{n+1}-5^{n}}{8}$

$\frac{5^{n}(5-1)}{8}$ = $\frac{5^{n}}{2}$

**[b]** $\frac{5^{n+2}-5^{n+1}}{2(5^{n+1})}$

$\frac{5^{n+1}(5-1)}{2(5^{n+1})}$ = 2

**[c]** $\frac{7^{ n-1}+7^{n}}{4 x 7^{n-1}}$

$\frac{7^{n-1}(1+7)}{4(7^{n-1})}$ = 2

**[d]** $\frac{3^{2n}+3^{n}}{3^{n+1}+3}$

$\frac{3^{n}(3^{n}+1)}{3(3^{n}+1)}$ = 3n-1

**[e]** $\frac{2^{n+1}+8}{3\left(2^{n}\right)+12}$

$\frac{2(2^{n}+4)}{3(2^{n}+4)}$ = $\frac{2}{3}$

