Rationalising the denominator

Rationalise the denominator,

1) $\dfrac{2 + \sqrt{2}}{3 + \sqrt{5}}$

2) $\dfrac{3 + \sqrt{3}}{3 + \sqrt{5}}$

3) $\dfrac{3 + \sqrt{6}}{5 + \sqrt{7}}$

4) $\dfrac{3 + \sqrt{2}}{3 + \sqrt{7}}$

5) $\dfrac{4 + \sqrt{7}}{3 + \sqrt{6}}$

6) $\dfrac{5 + \sqrt{6}}{5 + \sqrt{7}}$

7) $\dfrac{3 + \sqrt{3}}{5 + \sqrt{5}}$

8) $\dfrac{4 + \sqrt{7}}{5 + \sqrt{2}}$

9) $\dfrac{5 + \sqrt{2}}{4 + \sqrt{7}}$

10) $\dfrac{4 + \sqrt{7}}{5 + \sqrt{5}}$

11) $\dfrac{3 + \sqrt{2}}{2 + \sqrt{5}}$

12) $\dfrac{2 + \sqrt{3}}{4 + \sqrt{3}}$

13) $\dfrac{3 + \sqrt{6}}{4 + \sqrt{5}}$

14) $\dfrac{5 + \sqrt{6}}{3 + \sqrt{6}}$

15) $\dfrac{4 + \sqrt{5}}{4 + \sqrt{2}}$

16) $\dfrac{5 + \sqrt{5}}{3 + \sqrt{5}}$

17) $\dfrac{5 + \sqrt{3}}{5 + \sqrt{5}}$

18) $\dfrac{5 + \sqrt{3}}{3 + \sqrt{5}}$

19) $\dfrac{2 + \sqrt{2}}{5 + \sqrt{3}}$

20) $\dfrac{5 + \sqrt{6}}{5 + \sqrt{5}}$

Rationalising the denominator

1) $\dfrac{2 + \sqrt{2}}{3 + \sqrt{5}} = \dfrac{6 - 2\sqrt{5} + 3\sqrt{2} - \sqrt{10}}{4}$

2) $\dfrac{3 + \sqrt{3}}{3 + \sqrt{5}} = \dfrac{9 - 3\sqrt{5} + 3\sqrt{3} - \sqrt{15}}{4}$

3) $\dfrac{3 + \sqrt{6}}{5 + \sqrt{7}} = \dfrac{15 - 3\sqrt{7} + 5\sqrt{6} - \sqrt{42}}{18}$

4) $\dfrac{3 + \sqrt{2}}{3 + \sqrt{7}} = \dfrac{9 - 3\sqrt{7} + 3\sqrt{2} - \sqrt{14}}{2}$

5) $\dfrac{4 + \sqrt{7}}{3 + \sqrt{6}} = \dfrac{12 - 4\sqrt{6} + 3\sqrt{7} - \sqrt{42}}{3}$

6) $\dfrac{5 + \sqrt{6}}{5 + \sqrt{7}} = \dfrac{25 - 5\sqrt{7} + 5\sqrt{6} - \sqrt{42}}{18}$

7) $\dfrac{3 + \sqrt{3}}{5 + \sqrt{5}} = \dfrac{15 - 3\sqrt{5} + 5\sqrt{3} - \sqrt{15}}{20}$

8) $\dfrac{4 + \sqrt{7}}{5 + \sqrt{2}} = \dfrac{20 - 4\sqrt{2} + 5\sqrt{7} - \sqrt{14}}{23}$

9) $\dfrac{5 + \sqrt{2}}{4 + \sqrt{7}} = \dfrac{20 - 5\sqrt{7} + 4\sqrt{2} - \sqrt{14}}{9}$

10) $\dfrac{4 + \sqrt{7}}{5 + \sqrt{5}} = \dfrac{20 - 4\sqrt{5} + 5\sqrt{7} - \sqrt{35}}{20}$

11) $\dfrac{3 + \sqrt{2}}{2 + \sqrt{5}} = -6 + 3\sqrt{5} - 2\sqrt{2} + \sqrt{10}$

12) $\dfrac{2 + \sqrt{3}}{4 + \sqrt{3}} = \dfrac{5 + 2\sqrt{3}}{13}$

13) $\dfrac{3 + \sqrt{6}}{4 + \sqrt{5}} = \dfrac{12 - 3\sqrt{5} + 4\sqrt{6} - \sqrt{30}}{11}$

14) $\dfrac{5 + \sqrt{6}}{3 + \sqrt{6}} = \dfrac{9 - 2\sqrt{6}}{3}$

15) $\dfrac{4 + \sqrt{5}}{4 + \sqrt{2}} = \dfrac{16 - 4\sqrt{2} + 4\sqrt{5} - \sqrt{10}}{14}$

16) $\dfrac{5 + \sqrt{5}}{3 + \sqrt{5}} = \dfrac{5 - \sqrt{5}}{2}$

17) $\dfrac{5 + \sqrt{3}}{5 + \sqrt{5}} = \dfrac{25 - 5\sqrt{5} + 5\sqrt{3} - \sqrt{15}}{20}$

18) $\dfrac{5 + \sqrt{3}}{3 + \sqrt{5}} = \dfrac{15 - 5\sqrt{5} + 3\sqrt{3} - \sqrt{15}}{4}$

19) $\dfrac{2 + \sqrt{2}}{5 + \sqrt{3}} = \dfrac{10 - 2\sqrt{3} + 5\sqrt{2} - \sqrt{6}}{22}$

20) $\dfrac{5 + \sqrt{6}}{5 + \sqrt{5}} = \dfrac{25 - 5\sqrt{5} + 5\sqrt{6} - \sqrt{30}}{20}$