

A2.N.5: Rationalizing Denominators 3: Rationalize a denominator containing a radical expression

1 The expression $\frac{1}{2-\sqrt{3}}$ is equivalent to

1) $2+\sqrt{3}$

3) $\frac{2+\sqrt{3}}{-1}$

2) $2-\sqrt{3}$

4) $\frac{2-\sqrt{3}}{-1}$

2 The expression $\frac{5}{2-\sqrt{3}}$ is equivalent to

1) $10+5\sqrt{3}$

3) $-10-5\sqrt{3}$

2) $-2-\sqrt{3}$

4) $2+\sqrt{3}$

3 The expression $\frac{2}{\sqrt{3}-1}$ is equivalent to

1) $\sqrt{3}+1$

3) $\sqrt{3}+2$

2) $\frac{\sqrt{3}+3}{2}$

4) $2\sqrt{3}+1$

4 The expression $\frac{2}{3-\sqrt{3}}$ is equivalent to

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

3) $\frac{3-\sqrt{3}}{3}$

2) $1-2\sqrt{3}$

4) $\frac{3+\sqrt{3}}{3}$

5 The expression $\frac{6}{3-\sqrt{3}}$ is equivalent to

1) $2(3+\sqrt{3})$

3) $3+\sqrt{3}$

2) $18-6\sqrt{3}$

4) $3-\sqrt{3}$

6 The expression $\frac{1}{2 - \sqrt{11}}$ is equivalent to

1) $\frac{2 + \sqrt{11}}{9}$

3) $-\frac{2 + \sqrt{11}}{7}$

2) $\frac{2 + \sqrt{11}}{7}$

4) $-\frac{2 + \sqrt{11}}{9}$

7 The expression $\frac{7}{3 - \sqrt{2}}$ is equivalent to

1) $3 + \sqrt{2}$

3) $\frac{3 + \sqrt{2}}{7}$

2) $3 - \sqrt{2}$

4) $\frac{21 + \sqrt{2}}{7}$

8 The expression $\frac{2}{\sqrt{3} + 1}$ is equivalent to

1) $\frac{\sqrt{3}}{2}$

3) $\sqrt{3} - 1$

2) $\frac{2\sqrt{3} + 2}{4}$

4) $1 - \sqrt{3}$

9 The expression $\frac{7}{2 + 3\sqrt{2}}$ is equivalent to

1) $\frac{-2 + 3\sqrt{2}}{2}$

3) $-2 + 3\sqrt{2}$

2) $\frac{2 - 3\sqrt{2}}{2}$

4) $2 - 3\sqrt{2}$

10 What is the reciprocal of $3 - \sqrt{5}$?

1) $\frac{3 - \sqrt{5}}{4}$

3) $\frac{3 - \sqrt{5}}{14}$

2) $\frac{3 + \sqrt{5}}{4}$

4) $\frac{3 + \sqrt{5}}{14}$

11 The expression $\frac{3+\sqrt{2}}{3-\sqrt{2}}$ is equivalent to

1) $\frac{7}{11+6\sqrt{2}}$

3) $\frac{11}{7}$

2) $\frac{11-6\sqrt{2}}{7}$

4) $\frac{11+6\sqrt{2}}{7}$

12 The expression $\frac{\sqrt{3}+1}{\sqrt{3}-1}$ is equivalent to

1) -1

3) $2+\sqrt{3}$

2) 2

4) $5+\sqrt{3}$

13 Expressed in simplest form, $\frac{2\sqrt{3}}{1-\sqrt{3}}$ is equivalent to

1) $-3-\sqrt{3}$

3) $2\sqrt{3}$

2) $-3+\sqrt{3}$

4) -3

14 The expression $\frac{3+5\sqrt{3}}{4-2\sqrt{3}}$ is equivalent to

1) $\frac{-9+7\sqrt{3}}{2}$

3) $\frac{-18+14\sqrt{3}}{4}$

2) $\frac{21+13\sqrt{3}}{2}$

4) $\frac{42-26\sqrt{3}}{4}$

15 The expression $\frac{3+\sqrt{5}}{3-\sqrt{5}}$ is equivalent to

1) $\frac{7}{2}$

3) $\frac{10\sqrt{5}}{7}$

2) $\frac{7+3\sqrt{5}}{7}$

4) $\frac{7+3\sqrt{5}}{2}$

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1	ANS: 1	PTS: 2	REF: 018432siii
2	ANS: 1	PTS: 2	REF: 068131siii
3	ANS: 1	PTS: 2	REF: 088435siii
4	ANS: 4	PTS: 2	REF: 068831siii
5	ANS: 3	PTS: 2	REF: 018918siii
6	ANS: 3	PTS: 2	REF: 089319siii
7	ANS: 1	PTS: 2	REF: 019030siii
8	ANS: 3	PTS: 2	REF: 010328siii
9	ANS: 1	PTS: 2	REF: 060333siii
10	ANS: 2	PTS: 2	REF: 060218siii
11	ANS: 4	PTS: 2	REF: 068928siii
12	ANS: 3	PTS: 2	REF: 069433siii
13	ANS: 1	PTS: 2	REF: 089434siii
14	ANS: 2	PTS: 2	REF: 080333siii
15	ANS: 4	PTS: 2	REF: 018527siii