

Simplifying Surds (B)**Section A:** Simplify the following.

1) $\sqrt{6} \times \sqrt{2}$

5) $\sqrt{3} \times \sqrt{3}$

9) $\sqrt{4} \times \sqrt{4} \times \sqrt{4}$

2) $\sqrt{20} \times \sqrt{5}$

6) $\sqrt{4} \times \sqrt{16}$

10) $\sqrt{3} \times \sqrt{6} \times \sqrt{3}$

3) $\sqrt{7} \times \sqrt{7}$

7) $\sqrt{4} \times \sqrt{5} \times \sqrt{5}$

11) $\sqrt{6} \times \sqrt{12} \times \sqrt{6}$

4) $\sqrt{2} \times \sqrt{72}$

8) $\sqrt{2} \times \sqrt{4} \times \sqrt{2}$

12) $\sqrt{2} \times \sqrt{12} \times \sqrt{3}$

Section B: Simplify the following.

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

5) $\sqrt{48} \div \sqrt{3}$

9) $\sqrt{48} \div \sqrt{8}$

2) $\sqrt{15} \div \sqrt{5}$

6) $\sqrt{54} \div \sqrt{9}$

10) $\sqrt{5} \times \sqrt{6} \div \sqrt{2}$

3) $\sqrt{8} \div \sqrt{2}$

7) $\sqrt{96} \div \sqrt{12}$

11) $\sqrt{32} \times \sqrt{10} \div \sqrt{5}$

4) $\sqrt{27} \div \sqrt{3}$

8) $\sqrt{72} \div \sqrt{18}$

12) $\sqrt{24} \times \sqrt{2} \div \sqrt{3}$

Section C: Without rationalizing the denominator, simplify the following.

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

9) $\frac{\sqrt{52}}{4\sqrt{13}}$

14) $\frac{6\sqrt{3} \times 2\sqrt{21}}{9\sqrt{7}}$

2) $4\sqrt{5} \times 2\sqrt{5}$

10) $\frac{6\sqrt{27}}{3\sqrt{3}}$

15) $\frac{6\sqrt{8} \times 2\sqrt{40}}{3\sqrt{5}}$

3) $\sqrt{63} \times 2\sqrt{7}$

11) $\frac{6\sqrt{2} \times \sqrt{2}}{\sqrt{2}}$

16) $(\sqrt{11})^2$

4) $\sqrt{54} \times 2\sqrt{6}$

12) $\frac{\sqrt{15} \times 2\sqrt{5}}{\sqrt{3}}$

17) $(2\sqrt{3})^2$

5) $5\sqrt{2} \times \sqrt{10}$

13) $\frac{4\sqrt{3} \times 2\sqrt{2}}{\sqrt{3}}$

18) $(5\sqrt{3})^2$

6) $3\sqrt{11} \times 5\sqrt{99}$

19) $(3\sqrt{7} + 1)^2$

7) $5\sqrt{3} \times 2\sqrt{20}$

8) $\frac{\sqrt{108}}{\sqrt{3}}$

Simplifying Surds (B)

ANSWERS



Section A: Simplify the following.

1) $\sqrt{6} \times \sqrt{2} = 2\sqrt{3}$

5) $\sqrt{3} \times \sqrt{3} = 3$

9) $\sqrt{4} \times \sqrt{4} \times \sqrt{4} = 8$

2) $\sqrt{20} \times \sqrt{5} = 10$

6) $\sqrt{4} \times \sqrt{16} = 8$

10) $\sqrt{3} \times \sqrt{6} \times \sqrt{3} = 3\sqrt{6}$

3) $\sqrt{7} \times \sqrt{7} = 7$

7) $\sqrt{4} \times \sqrt{5} \times \sqrt{5} = 10$

11) $\sqrt{6} \times \sqrt{12} \times \sqrt{6} = 12\sqrt{3}$

4) $\sqrt{2} \times \sqrt{72} = 12$

8) $\sqrt{2} \times \sqrt{4} \times \sqrt{2} = 4$

12) $\sqrt{2} \times \sqrt{12} \times \sqrt{3} = 6\sqrt{2}$

Section B: Simplify the following.

1) $\sqrt{3} \div \sqrt{3} = 1$

5) $\sqrt{48} \div \sqrt{3} = 4$

9) $\sqrt{48} \div \sqrt{8} = \sqrt{6}$

2) $\sqrt{15} \div \sqrt{5} = \sqrt{3}$

6) $\sqrt{54} \div \sqrt{9} = \sqrt{6}$

10) $\sqrt{5} \times \sqrt{6} \div \sqrt{2} = \sqrt{15}$

3) $\sqrt{8} \div \sqrt{2} = 2$

7) $\sqrt{96} \div \sqrt{12} = 2\sqrt{2}$

11) $\sqrt{32} \times \sqrt{10} \div \sqrt{5} = 8$

4) $\sqrt{27} \div \sqrt{3} = 3$

8) $\sqrt{72} \div \sqrt{18} = 2$

12) $\sqrt{24} \times \sqrt{2} \div \sqrt{3} = 4$

Section C: Without rationalizing the denominator, simplify the following.

1) $2\sqrt{2} \times 3\sqrt{2} = 12$

9) $\frac{\sqrt{52}}{4\sqrt{13}} = \frac{1}{2}$

14) $\frac{6\sqrt{3} \times 2\sqrt{21}}{9\sqrt{7}} = 4$

2) $4\sqrt{5} \times 2\sqrt{5} = 40$

10) $\frac{6\sqrt{27}}{3\sqrt{3}} = 6$

15) $\frac{6\sqrt{8} \times 2\sqrt{40}}{3\sqrt{5}} = 32$

3) $\sqrt{63} \times 2\sqrt{7} = 42$

11) $\frac{6\sqrt{2} \times \sqrt{2}}{\sqrt{2}} = 6\sqrt{2}$

16) $(\sqrt{11})^2 = 11$

4) $\sqrt{54} \times 2\sqrt{6} = 36$

12) $\frac{\sqrt{15} \times 2\sqrt{5}}{\sqrt{3}} = 10$

17) $(2\sqrt{3})^2 = 12$

5) $5\sqrt{2} \times \sqrt{10} = 10\sqrt{5}$

13) $\frac{4\sqrt{3} \times 2\sqrt{2}}{\sqrt{3}} = 8\sqrt{2}$

18) $(5\sqrt{3})^2 = 75$

6) $3\sqrt{11} \times 5\sqrt{99} = 495$

19) $(3\sqrt{7} + 1)^2 = 64 + 6\sqrt{7}$

7) $5\sqrt{3} \times 2\sqrt{20} = 20\sqrt{15}$

8) $\frac{\sqrt{108}}{\sqrt{3}} = 6$