ILLAWARRA TUTORING

This worksheet is designed to help you learn how to eliminate surds from the denominator of fractions through rationalisation. You will practice multiplying by suitable expressions to remove surds from the denominator. Work through each question carefully.

Easy Questions

1. Rationalise the denominator of $\frac{1}{\sqrt{2}}$.
2. Rationalise the denominator of $\frac{2}{\sqrt{3}}$.
3. Rationalise the denominator of $\frac{3}{2\sqrt{5}}$.
4. Rationalise the denominator of $\frac{1}{\sqrt{7}}$.
5. Rationalise the denominator of $\frac{5}{4\sqrt{11}}$.

Intermediate Questions

6. Rationalise the denominator of $\frac{1}{\sqrt{3}+\sqrt{2}}$.
7. Rationalise the denominator of $\frac{2}{\sqrt{5}-1}$.
8. Rationalise the denominator of $\frac{3}{2+\sqrt{3}}$.
9. Rationalise the denominator of $\frac{1}{\sqrt{8}+\sqrt{2}}$.
10. Rationalise the denominator of $\frac{4}{3\sqrt{2}-\sqrt{3}}$.
11. Rationalise the denominator of $\frac{5}{\sqrt{7}+\sqrt{5}}$.
12. Rationalise the denominator of $\frac{2}{\sqrt{6}-\sqrt{2}}$.

13. Rationalise the denominator of $\dfrac{7}{2\sqrt{3}+\sqrt{6}}$.

14. Rationalise the denominator of $\dfrac{1}{\sqrt{10}-\sqrt{2}}$.

15. Rationalise the denominator of $\dfrac{3}{2\sqrt{3}+\sqrt{5}}$.

16. Rationalise the denominator of $\dfrac{1}{\sqrt{3}-\sqrt{11}}$.

17. Rationalise the denominator of $\dfrac{6}{3+\sqrt{7}}$.

18. Rationalise the denominator of $\dfrac{2}{\sqrt{11}+\sqrt{3}}$.

19. Rationalise the denominator of $\dfrac{1}{2\sqrt{2}+\sqrt{3}}$.

20. Rationalise the denominator of $\dfrac{5}{\sqrt{13}-\sqrt{5}}$.

Hard Questions

21. Rationalise the denominator of $\dfrac{\sqrt{3}+1}{\sqrt{3}-1}$.

22. Rationalise the denominator of $\dfrac{2\sqrt{2}+3}{\sqrt{2}-\sqrt{3}}$.

23. Rationalise the denominator of $\dfrac{3\sqrt{5}-2}{2\sqrt{5}+\sqrt{7}}$.

24. Rationalise the denominator of $\dfrac{4-\sqrt{3}}{2\sqrt{2}-\sqrt{3}}$.

25. Rationalise the denominator of $\dfrac{\sqrt{11}+\sqrt{3}}{\sqrt{11}-\sqrt{3}}$.

26. Rationalise the denominator of $\dfrac{3+\sqrt{2}}{1-\sqrt{2}}$.

27. Rationalise the denominator of $\dfrac{2\sqrt{3}}{\sqrt{5}-\sqrt{2}}$.

28. Rationalise the denominator of $\dfrac{\sqrt{7}-2}{\sqrt{7}+2}$.

29. Rationalise the denominator of $\dfrac{3\sqrt{3}+\sqrt{2}}{2\sqrt{3}-\sqrt{2}}$.

30. Rationalise the denominator of $\dfrac{5-\sqrt{2}}{3\sqrt{2}+\sqrt{3}}$.