ILLAWARRA TUTORING

In this worksheet you will learn how to eliminate surds from the denominator of fractions through rationalisation. Work through each question carefully and show all your steps.

Easy Questions

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

Intermediate Questions

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

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

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

15. Rationalise the denominator of $\dfrac{3}{4-\sqrt{10}}$.

16. Rationalise the denominator of $\dfrac{6}{5+2\sqrt{3}}$.

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

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

19. Given $\dfrac{7}{\sqrt{2}+1}$, rationalise the denominator.

20. Rationalise the denominator of $\dfrac{3}{\sqrt{6}-2}$.

Hard Questions

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

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

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

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

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

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

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

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

29. Rationalise the denominator of $\dfrac{5}{\sqrt{7}+\sqrt{3}}$.

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