

Rationalizing - Answers

1. $3\sqrt{2}$

2. $\frac{4\sqrt{3}}{3} + \frac{\sqrt{15}}{3}$

3. $-\frac{7}{2} + \frac{7\sqrt{3}}{2}$

4. $-4 - 2\sqrt{6}$

5. $\frac{5}{22} - \frac{\sqrt{3}}{22} + \frac{5\sqrt{2}}{22} - \frac{\sqrt{6}}{22}$

6. $\frac{5}{6} - \frac{i}{2}$

7. $\frac{3}{4} - \frac{i}{2}$

8. $\frac{3}{5} - \frac{i}{5}$

9. $\frac{6}{5} + \frac{3i}{5}$

10. $\frac{7}{2} + \frac{7i}{2}$

11. $\frac{53}{26} - \frac{4i}{13}$

12. $\frac{11}{50} + \frac{i}{25}$

13. $-\frac{3}{5} - \frac{7i}{10}$

selected answers

2. $\frac{4 + \sqrt{5}}{\sqrt{3}} \left(\frac{\sqrt{3}}{\sqrt{3}} \right)$

$$\boxed{\frac{4\sqrt{3} + \sqrt{15}}{3}} \text{ (can be written as 1 fraction)}$$

5. $\frac{1 + \sqrt{2}}{5 + \sqrt{3}} \left(\frac{5 - \sqrt{3}}{5 - \sqrt{3}} \right)$

$$\frac{5 + 5\sqrt{2} - \sqrt{3} - \sqrt{6}}{25 + 5\sqrt{3} - 5\sqrt{3} - \sqrt{9}}$$

$$\boxed{\frac{5 + 5\sqrt{2} - \sqrt{3} - \sqrt{6}}{22}}$$

7. $\frac{4 + 6i}{8i} \left(\frac{-8i}{-8i} \right)$

$$\frac{-32i - 48i^2}{-64i^2}$$

$$\frac{-3i + 48}{64} \text{ OR } \boxed{\frac{-2i + 3}{4}}$$

11. $\frac{10 + 11i}{4 + 6i} \left(\frac{4 - 6i}{4 - 6i} \right) = \frac{40 + 44i - 60i - 66i^2}{16 - 24i + 24i - 36i^2}$

$$= \frac{40 - 16i + 66}{16 + 36}$$

$$= \frac{106 - 16i}{52}$$

$$= \boxed{\frac{53 - 8i}{26}}$$

OR $\frac{53}{26} - \frac{4i}{13}$