

Review Questions for Exam 11
Algebra 2

1. Express $\sqrt{18} + 5\sqrt{2}$ in simplest radical form.

1. $8\sqrt{2}$
2. $2\sqrt{2}$
3. $6\sqrt{3}$
4. $6\sqrt{18}$

2. The expression $\sqrt{18} + \sqrt{32}$ is equivalent to

1. $2\sqrt{7}$
2. $5\sqrt{2}$
3. $7\sqrt{2}$
4. $13\sqrt{2}$

3. What is the sum of $4\sqrt{12}$ and $2\sqrt{27}$ in simplest form?

1. $5\sqrt{3}$
2. $6\sqrt{39}$
3. $11\sqrt{3}$
4. $14\sqrt{3}$

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

1. $11\sqrt{3}$
2. $7-4\sqrt{3}$
3. $7+4\sqrt{3}$
4. $\frac{7+4\sqrt{3}}{7}$

5. The expression $\frac{\sqrt{3}+1}{\sqrt{3}-1}$ is equal to

1. -1
2. 2
3. $2+\sqrt{3}$
4. $5+\sqrt{3}$

6. Express $\frac{5}{4 - \sqrt{13}}$ as an equivalent fraction with a rational denominator.

1. $20 + 5\sqrt{13}$

2. $20 - 5\sqrt{13}$

3. $\frac{20 + 5\sqrt{13}}{3}$

4. $\frac{20 + 5\sqrt{13}}{29}$

7. If $x > 0$, the expression $(\sqrt{x})(\sqrt{2x})$ is equivalent to

1. $\sqrt{2x}$

2. $2x$

3. $x^2\sqrt{2}$

4. $x\sqrt{2}$

8. Simplify: $\sqrt{50r^2s^4}$

1. $5rs^2\sqrt{2}$

2. $25rs$

3. $5\sqrt{2} + rs^2$

4. $5rs^2$

9. If $a > 0$, then $\sqrt{9a^2 + 16a^2}$ equals

1. $\sqrt{7a}$

2. $5\sqrt{a}$

3. $5a$

4. $7a$

10. Which expression is equivalent to $\frac{\sqrt{7} + \sqrt{2}}{\sqrt{7} - \sqrt{2}}$?

1. $\frac{9}{5}$

2. -1

3. $\frac{9 + 2\sqrt{14}}{5}$

4. $\frac{11 + \sqrt{2}}{14}$

11. Simplify the expression: $\sqrt{5}(\sqrt{10} + 2\sqrt{5})$

1. $10 + 5\sqrt{2}$
2. $5 + 10\sqrt{2}$
3. $15\sqrt{2}$
4. $\sqrt{15} + 2\sqrt{10}$

12. Simplify the expression: $3\sqrt{2}(\sqrt{6} - 2\sqrt{2})$

1. $3\sqrt{3} - 12$
2. $3\sqrt{3} + 12$
3. $6\sqrt{3} - 12$
4. $6\sqrt{3} + 12$

13. Simplify the expression: $\sqrt{8}(\sqrt{2} + \sqrt{18})$

1. $4\sqrt{10}$
2. 16
3. $16\sqrt{2}$
4. $4 + 3\sqrt{2}$

14. Simplify the expression: $\sqrt{3}(\sqrt{6} + \sqrt{8})$

1. $\sqrt{18} + \sqrt{24}$
2. $\sqrt{36}$
3. 6
4. $3\sqrt{2} + 2\sqrt{6}$

15. Simplify the expression: $2\sqrt{y}(\sqrt{8y^2} + \sqrt{6})$

1. $4y\sqrt{2y} + 12\sqrt{y}$
2. $2y\sqrt{2y} - 2\sqrt{6y}$
3. $4y\sqrt{2y} + 2\sqrt{6y}$
4. $2y\sqrt{-4y}$

16. Simplify the expression: $\sqrt{x^2y}(2x\sqrt{y} - 3\sqrt{x^2y})$

1. $-x^2y$
2. x^2y
3. $-5x^2y$
4. $-6x^4y^2$

17. Simplify the expression: $(2 + \sqrt{2})(\sqrt{2} - 4)$

1. $-6 + 2\sqrt{2}$
2. $-6 - 2\sqrt{2}$
3. $6 + 2\sqrt{2}$
4. $6 - 2\sqrt{2}$

18. Simplify the expression: $(4\sqrt{3} - 2)^2$

1. $8\sqrt{3}$
2. $-8\sqrt{3}$
3. $52 - 16\sqrt{3}$
4. $52 + 16\sqrt{3}$

19. Simplify the expression: $(3 + \sqrt{5})^2$

1. $14 + 6\sqrt{5}$
2. $14 - \sqrt{5}$
3. 14
4. 4

20. Simplify the expression: $6\sqrt{8} \cdot 2\sqrt{2}$

1. $12\sqrt{16}$
2. $\sqrt{192}$
3. 24
4. 48

21. Simplify the expression: $5\sqrt{r} \cdot \sqrt{rs}$

1. $5r\sqrt{s}$
2. $5\sqrt{r^2s}$
3. $5\sqrt{2rs}$
4. $5rs$

22. Simplify the expression: $3x\sqrt{90x^2} \cdot y\sqrt{2y^2}$

1. $18xy\sqrt{5}$
2. $18xy\sqrt{5xy}$
3. $18x^2y^2\sqrt{5}$
4. $18x^3y^3\sqrt{5}$

23. Simplify the expression: $\frac{5\sqrt{6}}{10\sqrt{2}}$

1. 1
2. $2\sqrt{3}$
3. $\frac{\sqrt{3}}{2}$
4. $\frac{3}{2}$

24. Simplify the expression: $\frac{\sqrt{9x^5y^2}}{\sqrt{36x^4y^2}}$

1. $\frac{x\sqrt{y}}{2}$
2. $\sqrt{2x}$
3. $2\sqrt{x}$
4. $\frac{\sqrt{x}}{2}$

25. Simplify the fraction: $\frac{4}{\sqrt{2}}$

1. $4\sqrt{2}$
2. $2\sqrt{2}$
3. $\frac{\sqrt{2}}{2}$
4. $\frac{\sqrt{2}}{4}$

26. Simplify the fraction: $\frac{\sqrt{3}}{\sqrt{7}}$

1. $\frac{\sqrt{21}}{7}$

2. $\frac{\sqrt{21}}{3}$

3. $7\sqrt{3}$

4. $3\sqrt{7}$

27. Simplify the radical expression: $\sqrt{36x^4y^2}$

1. $x^2y\sqrt{6}$

2. $6x^2y$

3. $6xy\sqrt{xy}$

4. $6\sqrt{x^2y}$

28. Simplify the radical expression: $x\sqrt{125x^5y^2z^4}$

1. $5xyz\sqrt{5xz}$

2. $5x^3yz^2\sqrt{25x}$

3. $5x^2yz^2\sqrt{5x}$

4. $5x^3yz^2\sqrt{5x}$

29. The expression $4ab\sqrt{2b} - 3a\sqrt{18b^3} + 7ab\sqrt{6b}$ is equivalent to:

1. $2ab\sqrt{6b}$

2. $16ab\sqrt{2b}$

3. $-5ab + 7ab\sqrt{6b}$

4. $-5ab\sqrt{2b} + 7ab\sqrt{6b}$

30. Express $5\sqrt{3x^3} - 2\sqrt{27x^3}$ in simplest radical form.

1. $x\sqrt{3x}$

2. $-x\sqrt{3x}$

3. $-\sqrt{3x}$

4. $\sqrt{3x}$

31. Simplify: $\sqrt[3]{54x^4y^5}$

1. $18xy\sqrt[3]{xy^2}$
2. $3xy\sqrt[3]{2xy^2}$
3. $27x^3y^3\sqrt[3]{2xy^2}$
4. $3x^2y^2\sqrt[3]{6y}$

32. The expression $\sqrt[3]{-16y^4z^{11}}$ is equivalent to which of the following?

1. $4y^2z^5\sqrt[3]{z}$
2. $-4yz^3\sqrt[3]{2yz^2}$
3. $-2yz^3\sqrt[3]{2yz^2}$
4. Cannot be simplified

33. The expression $\sqrt[4]{32x^7y^4z^{11}}$ is equivalent to which of the following?

1. $2xyz^2\sqrt[4]{2x^3z^3}$
2. $8xyz^2\sqrt[4]{2x^3yz^3}$
3. $2xyz^2\sqrt[4]{4x^3z^3}$
4. $4xyz^2\sqrt[4]{2x^3z^3}$

34. Which of the following expressions is equivalent to $\sqrt[4]{12x^4y^2} \cdot \sqrt[4]{4x^9y^5}$?

1. $3xy^3\sqrt[4]{2xy^3}$
2. $2xy^2\sqrt[4]{4x^3y^3}$
3. $4x^3y^4\sqrt[4]{6xy^3}$
4. $2x^3y^4\sqrt[4]{3xy^3}$

35. Which of the following expressions is equivalent to $\sqrt[5]{16x^7y^2} \cdot \sqrt[5]{10x^5y^5}$?

1. $5xy^5\sqrt[5]{2x^2y^3}$
2. $2xy^2\sqrt[5]{5x^3y^3}$
3. $2x^2y^5\sqrt[5]{5x^2y^2}$
4. $4x^6y^3\sqrt[5]{10y}$

36. Which of the following expressions is equivalent to $\sqrt[4]{810}$?

1. $9\sqrt{5}$
2. $3\sqrt[4]{10}$
3. $9\sqrt[4]{10}$
4. $3\sqrt[4]{5}$

37. The expression $\sqrt[3]{64a^{16}}$ is equivalent to

1. $8a^4$
2. $8a^8$
3. $4a^5\sqrt[3]{a}$
4. $4a^3\sqrt[3]{a^5}$