Algebra 2: Unit 6: Rational Functions

Name: _____ **Date:** _____

Estimate the given square or cube root functions. Round your answer to two decimal places.

1. $\sqrt{67}$	**2. $\sqrt{134}$**	**3. $\sqrt{55}$**	**4. $\sqrt{79}$**	**5. $\sqrt{910}$**
6. $\sqrt{1674}$	**7. $\sqrt{-25}$**	**8. $\sqrt{31}$**	**9. $\sqrt{24}$**	**10. $\sqrt{512}$**
11. $\sqrt{45}$	**12. $\sqrt{200}$**	**13. $\sqrt{147}$**	**14. $\sqrt{125}$**	**15. $\sqrt[3]{610}$**
16. $\sqrt[3]{54}$	**17. $\sqrt[3]{78}$**	**18. $\sqrt[3]{-421}$**	**19. $\sqrt[3]{336}$**	**20. $\sqrt[3]{463}$**
21. $\sqrt[3]{102}$	**22. $\sqrt[3]{495}$**	**23. $\sqrt[3]{183}$**	**24. $\sqrt[3]{247}$**	**25. $\sqrt[3]{308}$**

Determine the exact value for the given square or cube root functions.

1. $\sqrt{150}$	**2. $\sqrt{588}$**	**3. $\sqrt{1024}$**	**4. $\sqrt{28}$**	**5. $\sqrt{208}$**
6. $\sqrt{960}$	**7. $\sqrt{108}$**	**8. $\sqrt{549}$**	**9. $\sqrt{245}$**	**10. $\sqrt{175}$**
11. $\sqrt{891}$	**12. $\sqrt{5202}$**	**13. $\sqrt{1800}$**	**14. $\sqrt{384}$**	**15. $\sqrt[3]{108}$**
16. $\sqrt[3]{576}$	**17. $\sqrt[3]{2000}$**	**18. $\sqrt[3]{875}$**	**19. $\sqrt[3]{1024}$**	**20. $\sqrt[3]{5324}$**
21. $\sqrt[3]{324}$	**22. $\sqrt[3]{1715}$**	**23. $\sqrt[3]{24}$**	**24. $\sqrt[3]{3328}$**	**25. $\sqrt[3]{50625}$**

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Simplify as far as possible, using the exact values of the given square or cube root function.

1. $\sqrt{150m^5}$	**2.** $\sqrt{122x^{12}}$	**3.** $\sqrt{244t^2}$	**4.** $\sqrt{2u^9}$	**5.** $\sqrt{213x^7}$
6. $\sqrt{432w}$	**7.** $\sqrt{108s^3}$	**8.** $\sqrt{49e^8}$	**9.** $\sqrt{56p^2}$	**10.** $\sqrt{125j^5}$
11. $\sqrt{243q^7}$	**12.** $\sqrt{50m^4}$	**13.** $\sqrt{8k^3s^2}$	**14.** $\sqrt{384t^5g^2}$	**15.** $\sqrt[3]{108s^4}$
16. $\sqrt[3]{8k^3}$	**17.** $\sqrt[3]{375x^5s^6}$	**18.** $\sqrt[3]{125pqr^2}$	**19.** $\sqrt[3]{56s^2t}$	**20.** $\sqrt[3]{704b^4}$
21. $\sqrt[3]{24n^4m^6}$	**22.** $\sqrt[3]{54g^2}$	**23.** $\sqrt[3]{24}$	**24.** $\sqrt[3]{40z^7n^2}$	**25.** $\sqrt[3]{189p^5}$

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Algebra 2 Unit 6: Rational and Root Functions

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Simplify as far as possible, using the exact values of the given square or cube root function.

1. $\sqrt{2}*\sqrt{5}$	**2.** $-\sqrt{6}*4\sqrt{20}$	**3.** $-4\sqrt{3}*\sqrt{18}$	**4.** $4\sqrt{30}*\sqrt{6}$	**5.** $\sqrt{2}*\sqrt{12}$
6. $\sqrt{2}*-4\sqrt{6}$	**7.** $2\sqrt{12}*2\sqrt{3}$	**8.** $4\sqrt{2}*5\sqrt{3}$	**9.** $2\sqrt{12}*4\sqrt{15}$	**10.** $-3\sqrt{15}*5\sqrt{6}$
11. $\frac{6\sqrt{6}}{\sqrt{4}}$	**12.** $\frac{5\sqrt{10}}{6\sqrt{2}}$	**13.** $\frac{4\sqrt{6}}{\sqrt{2}}$	**14.** $\frac{3\sqrt{30}}{6\sqrt{216}}$	**15.** $\frac{3\sqrt{36}}{6\sqrt{4}}$
16. $\frac{6\sqrt{36}}{4\sqrt{4}}$	**17.** $\frac{3\sqrt{6}}{\sqrt{5}}$	**18.** $\frac{5\sqrt{5}}{4\sqrt{2}}$	**19.** $-\frac{4}{3\sqrt{5}}$	**20.** $\frac{2\sqrt{5}}{\sqrt{2}}$
21. $\frac{4\sqrt{3}}{3\sqrt{2}}$	**22.** $\frac{6\sqrt{6}}{2\sqrt{5}}$	**23.**	**24.**	**25.**

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11. $\frac{6\sqrt{6}}{\sqrt{4}}$	**12.** $\frac{5\sqrt{10}}{6\sqrt{2}}$	**13.** $\frac{4\sqrt{6}}{\sqrt{2}}$	**14.** $\frac{3\sqrt{30}}{6\sqrt{216}}$	**15.** $\frac{3\sqrt{36}}{6\sqrt{4}}$
16. $\frac{6\sqrt{36}}{4\sqrt{4}}$	**17.** $\frac{3\sqrt{6}}{\sqrt{5}}$	**18.** $\frac{5\sqrt{5}}{4\sqrt{2}}$	**19.** $-\frac{4}{3\sqrt{5}}$	**20.** $\frac{2\sqrt{5}}{\sqrt{2}}$
21. $\frac{4\sqrt{3}}{3\sqrt{2}}$	**22.** $\frac{6\sqrt{6}}{2\sqrt{5}}$	**23.**	**24.**	**25.**