



Radicals - Simplifying Practice

1 Simplify the radical

$$\sqrt{2 \cdot 2}$$

A 1	B 2	C 5
D $2\sqrt{2}$	E $\sqrt{2}$	

2 Simplify the radical

$$\sqrt{2 \cdot 3 \cdot 3}$$

A 4	B 1	C 2
D 6	E $3\sqrt{2}$	

3 Simplify the radical

$$\sqrt{18}$$

A 1	B $3\sqrt{2}$	C 2
D 4	E $4\sqrt{3}$	

4 Simplify the radical.

$$\sqrt{5 + 11}$$

A $6\sqrt{3}$	B $3\sqrt{4}$	C 4
D 6	E 3	

5 Simplify the radical.

$$\sqrt{467 - 62}$$

A $10\sqrt{5}$	B 9
C $7\sqrt{8}$	D $6\sqrt{7}$
E $9\sqrt{5}$	

6 Simplify the radical.

$$2 + \sqrt{58 + 23}$$

A $2 + \sqrt{3}$	B 2
C $2 + \sqrt{2}$	D 4
E 11	

7 Simplify the radical.

$$1 + \sqrt{439 - 43}$$

A $1 + 3\sqrt{11}$	B $1 + 4\sqrt{9}$
C $1 + 6\sqrt{9}$	D $1 + 6\sqrt{11}$
E $1 + 5\sqrt{14}$	

8 Simplify the radical.

$$2\sqrt{32 + 17}$$

A 10	B 17
C 14	D $17\sqrt{3}$



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9 Simplify the radical.

$$3\sqrt{67+58}$$

A $18\sqrt{7}$

B $11\sqrt{2}$

C $15\sqrt{5}$

D $11\sqrt{3}$

E $12\sqrt{6}$

10 What integer does this radical expression simplify to?

$$\sqrt{14 \div \frac{2}{7}}$$

A 16	B 14	C 5
D 7	E 6	F 12

11 What integer does this radical expression simplify to?

$$\sqrt{6 \div \frac{12}{8}}$$

A 7	B 4	C 2
D 3	E 5	F 8

12 What does this radical expression simplify to?

$$\sqrt{44 \div \frac{36}{11}}$$

A $\frac{5}{2}$	B $\frac{7}{3}$	C $\frac{11}{3}$
D $\frac{16}{5}$	E $\frac{7}{8}$	

13 What does this radical expression simplify to?

$$\sqrt{28 \div \frac{300}{21}}$$

A $\frac{7}{5}$	B $\frac{3}{4}$	C $\frac{2}{3}$
D $\frac{12}{13}$	E $\frac{1}{8}$	

14 What integer does this radical expression simplify to?

$$\sqrt{\frac{9}{4} \div \frac{3}{12}}$$

A 4	B 3	C 9
D 7	E 8	F 5

15 What integer does this radical expression simplify to?

$$\sqrt{\frac{60}{16} \div \frac{3}{20}}$$

A 5	B 3	C 12
D 8	E 2	F 4

16 What does this radical expression simplify to?

$$\sqrt{\frac{12}{9} \div \frac{12}{9}}$$

A $\frac{3}{5}$	B $\frac{1}{5}$
C $\frac{2}{3}$	D 1



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17 What does this radical expression simplify to?

$$\sqrt{\frac{88}{12} \div \frac{8}{33}}$$

A $\frac{15}{7}$	B $\frac{1}{6}$	C $\frac{19}{4}$
D $\frac{11}{2}$	E 2	

18 What integer does this radical expression simplify to?

$$\sqrt[3]{8^4}$$

A 17	B 23	C 25
D 11	E 16	F 14

19 What integer does this radical expression simplify to?

$$\sqrt{4^3}$$

A 8	B 13	C 11
D 15	E 16	F 3

20 What integer does this radical expression simplify to?

$$\frac{\sqrt[3]{16^3}}{16}$$

A 4	B 6	C 1
D 10	E 8	F 7

21 What integer does this radical expression simplify to?

$$\frac{\sqrt{32^2}}{32}$$

A 8	B 10	C 7
D 9	E 6	F 1

22 What integer does this radical expression simplify to?

$$\frac{16}{\sqrt[3]{16^3}}$$

A 7	B 5	C 10
D 1	E 8	F 2

23 What integer does this radical expression simplify to?

$$\frac{64}{\sqrt[3]{8^5}}$$

A 7	B 8	C 2
D 1	E 4	F 6

24 Simplify the radical

$$\sqrt{2 \cdot 2 \cdot 11}$$

A $4\sqrt{14}$	B $2\sqrt{11}$
C $4\sqrt{8}$	D $\sqrt{9}$

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25 Simplify the radical
 $\sqrt{27}$

A $3\sqrt{3}$	B 2
C 4	D $3\sqrt{6}$

26 What integer does this radical expression simplify to?

$$\frac{\sqrt{81^2}}{\sqrt[3]{9^3}}$$

A 7	B 5	C 16
D 4	E 17	F 9

27 What integer does this radical expression simplify to?

$$\frac{\sqrt[3]{81^3}}{\sqrt{9^3}}$$

A 8	B 3	C 4
D 10	E 12	F 6

28 What does this radical expression simplify to?

$$\frac{\sqrt{125^2}}{25}$$

A $\frac{43}{23}$	B 5	C $\frac{173}{51}$
D $\frac{8}{9}$	E $\frac{61}{49}$	

29 Simplify the radical
 $\sqrt{5^2 \cdot r^2}$

A $r\sqrt{2}$	B $7r\sqrt{2}$
C $5r$	D $2r\sqrt{2}$

30 What does this radical expression simplify to?

$$\frac{\sqrt{27^2}}{16}$$

A 2	B $\frac{7}{13}$	C $\frac{27}{16}$
D $\frac{7}{4}$	E $\frac{31}{11}$	

31 What does this radical expression simplify to?

$$\frac{81}{\sqrt{36^3}}$$

A $\frac{47}{62}$	B $\frac{162}{11}$	C $\frac{3}{8}$
D $\frac{30}{107}$	E $\frac{66}{19}$	

32 Simplify the radical

$$\sqrt{2^2 \cdot 7 \cdot c^2 \cdot c}$$

A $c\sqrt{9c^3}$	B $3c^2\sqrt{3c^2}$
C $c\sqrt{4c}$	D $4c\sqrt{3c}$
E $2c\sqrt{7c}$	



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33 What does this radical expression simplify to?

$$\frac{216}{\sqrt[3]{27^4}}$$

A	$\frac{8}{3}$	B	$\frac{88}{27}$	C	$\frac{365}{98}$
D	$\frac{281}{42}$	E	$\frac{37}{49}$		

34 What does this radical expression simplify to?

$$\frac{\sqrt{81^2}}{\sqrt[3]{81^3}}$$

A	$\frac{116}{21}$	B	$\frac{142}{155}$	C	1
D	$\frac{134}{55}$	E	$\frac{1}{44}$		

35 Simplify the radical

$$\sqrt{5 \cdot 5 \cdot p \cdot p}$$

A	$7p^2\sqrt{2}$	B	$5p$
C	$8p^3\sqrt{2}$	D	$4p$
E	$8p^2\sqrt{3}$		

36 What does this radical expression simplify to?

$$\frac{\sqrt{8^2}}{\sqrt[3]{8^2}}$$

A	2	B	$\frac{13}{8}$	C	$\frac{5}{2}$
D	$\frac{17}{8}$	E	$\frac{2}{5}$		

37 Simplify the radical

$$\sqrt{25r^2}$$

A	$r\sqrt{2}$	B	$r\sqrt{3}$	C	$5r$
D	$6r$	E	$7r^2$		

38 Simplify the radical

$$\sqrt{2 \cdot 2 \cdot 3 \cdot z \cdot z \cdot z}$$

A	$4z\sqrt{z}$	B	$3z\sqrt{3z^3}$
C	$2z\sqrt{3z}$	D	$2z^2\sqrt{z^3}$
E	$z^3\sqrt{2z}$		

39 Simplify the radical

$$\sqrt{75r^2}$$

A	$4r\sqrt{3}$	B	$5r\sqrt{3}$
C	r^2	D	$3r\sqrt{5}$
E	$6r\sqrt{3}$		

40 Simplify the radical

$$\sqrt{3^2 \cdot z^2}$$

A	$4z^3$	B	$3z$
C	$5z^3\sqrt{4}$	D	$4z\sqrt{2}$
E	$2z^3\sqrt{2}$		



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41 Simplify the radical

$$\sqrt{3^2 \cdot 11 \cdot c}$$

A	$\sqrt{13c^3}$	B	$6\sqrt{9c}$
C	$\sqrt{7c}$	D	$3\sqrt{11c}$
E	$\sqrt{11c}$		

42 Simplify the radical

$$\sqrt{3 \cdot 3 \cdot d \cdot d \cdot d \cdot d}$$

A	$5d$	B	$4d^3\sqrt{4}$
C	d	D	$3d^2$
E	$4d^2$		

43 Simplify the radical

$$\sqrt{9n^4}$$

A	n	B	$4n^3$
C	$2n^3\sqrt{4}$	D	$3n^2$

44 Simplify the radical

$$\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 11 \cdot x \cdot x \cdot x}$$

A	$6x^3\sqrt{11x}$	B	$3x\sqrt{14x^2}$
C	$x\sqrt{13x^2}$	D	$3x\sqrt{10x^3}$
E	$4x\sqrt{11x}$		

45 Simplify the radical

$$\sqrt{50b^5}$$

A	$3b^4\sqrt{b}$	B	$8b^2\sqrt{4b}$
C	$4b^4\sqrt{b}$	D	$5b^2\sqrt{2b}$
E	$b^3\sqrt{5b^2}$		

46 Convert the radical to a fractional exponent

$$\sqrt{7}$$

A	$7^{\frac{1}{3}}$	B	$21^{\frac{1}{2}}$	C	$7^{\frac{1}{2}}$
D	$7^{-\frac{1}{2}}$	E	$28^{\frac{1}{2}}$		

47 Convert the fractional exponent to a radical

$$11^{\frac{1}{2}}$$

A	$\sqrt{8}$	B	$\sqrt{14}$
C	$\frac{1}{4\sqrt{11}}$	D	$3\sqrt{11}$
E	$\sqrt{11}$		

48 Convert the radical to a fractional exponent

$$\frac{1}{\sqrt{3}}$$

A	$3^{-\frac{1}{3}}$	B	$3^{\frac{1}{2}}$
C	$12^{-\frac{1}{2}}$	D	$3^{-\frac{1}{2}}$



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49 Convert the fractional exponent to a radical

$$7^{-\frac{1}{2}}$$

A $\frac{1}{4\sqrt{7}}$	B $\sqrt{8}$	C $\frac{1}{\sqrt{7}}$
D $\frac{1}{\sqrt{9}}$	E $\frac{1}{\sqrt{4}}$	

50 Convert the radical to a fractional exponent

$$\sqrt{11r^3}$$

A $11^{-\frac{1}{2}} \cdot r^{-\frac{3}{2}}$	B $11^{\frac{1}{3}} \cdot r^{\frac{3}{3}}$
C $44^{\frac{1}{2}} \cdot r^{\frac{3}{2}}$	D $11^{\frac{1}{2}} \cdot r^{\frac{3}{2}}$

51 Convert the radical to a fractional exponent

$$\sqrt{5x^3n^5}$$

A $20^{\frac{1}{2}} \cdot x^{\frac{3}{2}} \cdot n^{\frac{5}{2}}$
B $5^{-\frac{1}{2}} \cdot x^{-\frac{3}{2}} \cdot n^{-\frac{5}{2}}$
C $5^{\frac{1}{2}} \cdot x^{\frac{3}{2}} \cdot n^{\frac{7}{2}}$
D $5^{\frac{1}{2}} \cdot x^{\frac{3}{2}} \cdot n^{\frac{5}{2}}$

52 Convert the fractional exponent to a radical

$$3^{\frac{1}{2}} \cdot d^{\frac{3}{2}}$$

A $\sqrt{3d^3}$	B $4d\sqrt{4d^2}$
C $d\sqrt{d}$	D $\frac{1}{d\sqrt{d}}$
E $2d\sqrt{d}$	

53 Convert the fractional exponent to a radical

$$5^{\frac{1}{2}} \cdot b^{\frac{3}{2}} \cdot m^{\frac{5}{2}}$$

A $\frac{1}{b^3m^2\sqrt{4b^3m}}$	B $\sqrt{5b^3m^5}$
C $3bm^2\sqrt{3b^3m}$	D $2b^2m\sqrt{8b^3m}$
E $bm^3\sqrt{4bm}$	

54 Convert the radical to a fractional exponent

$$\frac{1}{\sqrt{3r^3}}$$

A $9^{-\frac{1}{2}} \cdot r^{-\frac{3}{2}}$	B $3^{-\frac{1}{2}} \cdot r^{-\frac{3}{2}}$
C $3^{-\frac{1}{2}} \cdot r^{-\frac{2}{2}}$	D $12^{-\frac{1}{2}} \cdot r^{-\frac{3}{2}}$
E $3^{\frac{1}{2}} \cdot r^{\frac{3}{2}}$	



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55 Convert the radical to a fractional exponent

$$\frac{1}{\sqrt{3px^3}}$$

A

$$3^{\frac{1}{2}} \cdot p^{\frac{1}{2}} \cdot x^{\frac{3}{2}}$$

B

$$3^{-\frac{1}{3}} \cdot p^{-\frac{1}{3}} \cdot x^{-\frac{3}{3}}$$

C

$$3^{-\frac{1}{2}} \cdot p^{-\frac{1}{2}} \cdot x^{-\frac{3}{2}}$$

D

$$3^{-\frac{1}{2}} \cdot p^{-\frac{3}{2}} \cdot x^{-\frac{2}{2}}$$

56 Convert the fractional exponent to a radical

$$5^{-\frac{1}{2}} \cdot y^{-\frac{1}{2}}$$

A

$$\frac{1}{\sqrt{4y^2}}$$

B

$$\frac{1}{\sqrt{4y^3}}$$

C

$$\sqrt{5y}$$

D

$$\frac{1}{\sqrt{8y}}$$

E

$$\frac{1}{\sqrt{5y}}$$

57 Convert the fractional exponent to a radical

$$5^{-\frac{1}{2}} \cdot b^{-\frac{5}{2}} \cdot m^{-\frac{5}{2}}$$

A

$$\frac{1}{b^4 m^2 \sqrt{6b^2 m}}$$

B

$$\frac{1}{\sqrt{5b^5 m^5}}$$

C

$$2b^2 m \sqrt{5bm^3}$$

D

$$\frac{1}{b^4 m \sqrt{8b^2 m}}$$

E

$$\frac{1}{bm^4 \sqrt{3bm^3}}$$

58 Simplify the radical

$$\sqrt[3]{2^3}$$

A

$$3$$

B

$$\sqrt[3]{4}$$

C

$$2$$

D

$$4$$

E

$$1$$

59 Simplify the radical

$$\sqrt[3]{3^3 \cdot 5}$$

A

$$5\sqrt[3]{6}$$

B

$$2\sqrt[3]{2}$$

C

$$5\sqrt[3]{3}$$

D

$$\sqrt[3]{5}$$

E

$$3\sqrt[3]{5}$$

60 Simplify the radical

$$\sqrt[3]{5 \cdot 5 \cdot 5}$$

A

$$5$$

B

$$7\sqrt[3]{2}$$

C

$$4\sqrt[3]{4}$$

D

$$\sqrt[3]{4}$$

E

$$1$$



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61 Simplify the radical

$$\sqrt[3]{27}$$

A $5\sqrt[3]{3}$	B 5	C 3
D 4	E 1	

62 Simplify the radical

$$\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 11}$$

A $3\sqrt[3]{11}$	B $4\sqrt[3]{8}$
C $5\sqrt[3]{13}$	D $5\sqrt[3]{11}$
E $2\sqrt[3]{8}$	

63 Simplify the radical

$$\sqrt[3]{875}$$

A $3\sqrt[3]{8}$	B $6\sqrt[3]{3}$	C $5\sqrt[3]{5}$
D $4\sqrt[3]{6}$	E $5\sqrt[3]{7}$	

64 Simplify the radical.

$$\sqrt[3]{67-3}$$

A $\sqrt[3]{4}$	B 4
C 7	D 5

65 Simplify the radical

$$\sqrt[3]{5^3}$$

A 5	B 1	C $5\sqrt[3]{4}$
D 7	E 8	

66 Simplify the radical.

$$\sqrt[3]{913-209}$$

A $\sqrt[3]{13}$	B $3\sqrt[3]{7}$
C $\sqrt[3]{9}$	D $2\sqrt[3]{7}$
E $4\sqrt[3]{11}$	

67 Simplify the radical

$$\sqrt[3]{2^3 \cdot 11}$$

A $\sqrt[3]{12}$	B $\sqrt[3]{8}$
C $4\sqrt[3]{12}$	D $2\sqrt[3]{11}$
E $5\sqrt[3]{9}$	

68 Simplify the radical

$$\sqrt[3]{3 \cdot 3 \cdot 3}$$

A $\sqrt[3]{3}$	B 3
C 1	D $3\sqrt[3]{2}$



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69 Simplify the radical.

$$1 + \sqrt[3]{9-1}$$

A	4	B	$1 + \sqrt[3]{4}$
C	3	D	10
E	$1 + \sqrt[3]{3}$		

70 Simplify the radical

$$\sqrt[3]{125}$$

A	5	B	3
C	1	D	$4\sqrt[3]{4}$

71 Simplify the radical.

$$1 + \sqrt[3]{325-5}$$

A	$1 + 4\sqrt[3]{7}$	B	$1 + 4\sqrt[3]{5}$
C	$1 + 2\sqrt[3]{3}$	D	$1 + 3\sqrt[3]{4}$
E	$1 + \sqrt[3]{8}$		

72 Simplify the radical

$$\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2}$$

A	1	B	2
C	$2\sqrt[3]{2}$		

73 Simplify the radical.

$$4\sqrt[3]{9-1}$$

A	8	B	6
C	11	D	4

74 Simplify the radical

$$\sqrt[3]{54}$$

A	$\sqrt[3]{5}$	B	$\sqrt[3]{4}$	C	$6\sqrt[3]{3}$
D	$\sqrt[3]{2}$	E	$3\sqrt[3]{2}$		

75 Simplify the radical.

$$2\sqrt[3]{471-23}$$

A	$8\sqrt[3]{6}$	B	$8\sqrt[3]{7}$
C	$6\sqrt[3]{5}$	D	$7\sqrt[3]{6}$
E	$10\sqrt[3]{5}$		

76 Simplify the radical.

$$\sqrt[3]{111+105}$$

A	9	B	4
C	7	D	6



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77 Simplify the radical.

$$\sqrt[3]{2486 - 110}$$

A $7\sqrt[3]{13}$

B $4\sqrt[3]{9}$

C $6\sqrt[3]{11}$

D $4\sqrt[3]{11}$

E $8\sqrt[3]{9}$

78 Simplify the radical.

$$1 + \sqrt[3]{166 + 50}$$

A 10

B $1 + \sqrt[3]{5}$

C 7

D 6

E $1 + \sqrt[3]{4}$

79 Simplify the radical.

$$2 + \sqrt[3]{50 - 10}$$

A $2 + 1$

B $2 + \sqrt[3]{6}$

C $2 + 2\sqrt[3]{5}$

D $2 + 5\sqrt[3]{4}$

80 Simplify the radical.

$$2\sqrt[3]{74 - 10}$$

A 4

B 6

C $6\sqrt[3]{4}$

D 8

E $11\sqrt[3]{2}$