Name



Radicals - Simplifying Advanced

1 Simplify the radical $\sqrt{25x^2}$

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

2 Simplify the radical $\sqrt{16r^4z^2}$

A $3rz$	B $5r^4z$
C $4r^2z$	D $7r^4z\sqrt{2}$
E $3r^3z\sqrt{4}$	

3 Simplify the radical $\sqrt{75m^4}$

A $6m^3\sqrt{5}$	B $8m$
C $5m^2\sqrt{3}$	D $7m^4\sqrt{5}$
E $8m^3\sqrt{5}$	

4 Simplify the radical $\sqrt{275n^2m^2}$

A $nm\sqrt{11}$	B $3n^3m^3\sqrt{9}$
C $4nm^3\sqrt{11}$	D $5nm\sqrt{11}$
E $7nm\sqrt{10}$	

5 Simplify the radical $\sqrt[3]{5^3 \cdot p^3}$

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

6 Simplify the radical $\sqrt[3]{3^3 \cdot q^3}$

A $2q\sqrt[3]{4}$	B $3q^2\sqrt[3]{3}$
C $3q$	D $q\sqrt[3]{3}$
E $q\sqrt[3]{4}$	

7 Simplify the radical $\sqrt[3]{3 \cdot 5^3 \cdot m}$

A $\sqrt[3]{3m^2}$	B $5\sqrt[3]{3m}$
C $5\sqrt[3]{m}$	D $2\sqrt[3]{5m}$

8 Simplify the radical $\sqrt[3]{2^3 \cdot 2^3 \cdot 11 \cdot m}$

A $2\sqrt[3]{13m^2}$	B $4\sqrt[3]{11m^3}$
C $6\sqrt[3]{7m^2}$	D $4\sqrt[3]{11m}$
E $6\sqrt[3]{8m}$	

Name



Radicals - Simplifying Advanced

9 Simplify the radical $\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot q \cdot q \cdot q}$

A $6q\sqrt[3]{3}$	B $4q$	C $7q$
D $q\sqrt[3]{3}$	E $2q^3$	

10 Simplify the radical $\sqrt[3]{3 \cdot 3 \cdot 3 \cdot t \cdot t \cdot t}$

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

11 Simplify the radical $\sqrt[3]{8t^3}$

A $t\sqrt[3]{4}$	B $2t$
C $4t^2\sqrt[3]{3}$	D $3t^2\sqrt[3]{2}$

12 Simplify the radical $\sqrt[3]{27w^6}$

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

13 Simplify the radical $\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 5 \cdot m}$

A $4\sqrt[3]{7m^2}$	B $\sqrt[3]{2m}$
C $4\sqrt[3]{4m}$	D $\sqrt[3]{4m}$
E $3\sqrt[3]{5m}$	

14 Simplify the radical $\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 7 \cdot w \cdot w}$

A $\sqrt[3]{3w^2}$	B $5\sqrt[3]{10w^4}$
C $3\sqrt[3]{7w^2}$	D $2\sqrt[3]{10w^2}$
E $\sqrt[3]{9w}$	

15 Simplify the radical $\sqrt[3]{375w^3}$

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

16 Simplify the radical $\sqrt[3]{88q^4}$

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

Name



Radicals - Simplifying Advanced

17 Convert the radical to a fractional exponent

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

A $2^{-\frac{1}{2}} \cdot z^{-\frac{3}{2}} \cdot y^{-\frac{1}{2}}$

B $2^{\frac{1}{2}} \cdot z^{\frac{3}{2}} \cdot y^{\frac{1}{2}}$

C $2^{\frac{1}{3}} \cdot z^{\frac{3}{3}} \cdot y^{\frac{1}{3}}$

D $4^{\frac{1}{2}} \cdot z^{\frac{3}{2}} \cdot y^{\frac{1}{2}}$

E $2^{\frac{1}{2}} \cdot z^{\frac{2}{2}} \cdot y^{\frac{2}{2}}$

18 Convert the fractional exponent to a radical

$$3^{\frac{1}{2}} \cdot r^{\frac{3}{2}} \cdot b^{\frac{3}{2}}$$

A $\sqrt{3r^3b^3}$

B $2rb^3\sqrt{rb^3}$

C $3rb\sqrt{rb^2}$

D $\dfrac{1}{rb\sqrt{5rb^2}}$

E $rb\sqrt{r^2b^3}$

19 Convert the radical to a fractional exponent

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

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

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

20 Convert the fractional exponent to a radical

$$5^{-\frac{1}{2}} \cdot r^{-\frac{3}{2}} \cdot x^{-\frac{3}{2}}$$

A $\dfrac{1}{rx\sqrt{3rx}}$

B $\dfrac{1}{r^2x\sqrt{4rx}}$

C $\dfrac{1}{r^2x\sqrt{8rx}}$

D $\dfrac{1}{\sqrt{5r^3x^3}}$

E $rx\sqrt{5rx^3}$

21 Convert the radical to a fractional exponent

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

A $4^{\frac{1}{3}}$

B $2^{-\frac{1}{3}}$

C $6^{\frac{1}{3}}$

D $2^{\frac{1}{3}}$

Name



Radicals - Simplifying Advanced

22 Convert the radical to a fractional exponent

$\sqrt[3]{5}$

A $5^{-\frac{1}{3}}$

B $5^{\frac{1}{2}}$

C $5^{\frac{1}{3}}$

D $10^{\frac{1}{3}}$

23 Convert the fractional exponent to a radical

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

A 4

B $\frac{1}{4\sqrt[3]{2}}$

C $\sqrt[3]{3}$

D $\sqrt[3]{4}$

E $\sqrt[3]{2}$

24 Convert the fractional exponent to a radical

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

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

B 1

C $\sqrt[3]{2}$

D $\frac{1}{\sqrt[3]{2}}$

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

25 Convert the radical to a fractional exponent

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

A $3^{-\frac{1}{3}}$

B $3^{-\frac{1}{2}}$

C $6^{-\frac{1}{3}}$

D $3^{\frac{1}{3}}$

E $9^{-\frac{1}{3}}$

26 Convert the radical to a fractional exponent

$\frac{1}{\sqrt[3]{5}}$

A $5^{-\frac{1}{3}}$

B $5^{\frac{1}{3}}$

C $5^{-\frac{1}{2}}$

27 Convert the fractional exponent to a radical

$7^{-\frac{1}{3}}$

A $\sqrt[3]{7}$

B $\sqrt[3]{9}$

C $\frac{1}{2\sqrt[3]{5}}$

D $\frac{1}{3\sqrt[3]{8}}$

E $\frac{1}{\sqrt[3]{7}}$

28 Convert the fractional exponent to a radical

$2^{-\frac{1}{3}}$

A $\frac{1}{\sqrt[3]{2}}$

B $\sqrt[3]{4}$

C $\frac{1}{1}$

D $\frac{1}{2\sqrt[3]{3}}$

E $\frac{1}{\sqrt[3]{5}}$

29 Convert the radical to a fractional exponent

$\sqrt[3]{11c}$

A $22^{\frac{1}{3}} \cdot c^{\frac{1}{3}}$

B $11^{\frac{1}{3}} \cdot c^{\frac{3}{3}}$

C $11^{\frac{1}{3}} \cdot c^{\frac{1}{3}}$

D $33^{\frac{1}{3}} \cdot c^{\frac{1}{3}}$

Name



Radicals - Simplifying Advanced

30 Convert the fractional exponent to a radical

$$7^{\frac{1}{3}} \cdot p^{\frac{1}{3}}$$

A $\dfrac{1}{\sqrt[3]{8p}}$

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

C $3\sqrt[3]{3p}$

D $\dfrac{1}{\sqrt[3]{7p}}$

E $\sqrt[3]{7p}$

31 Simplify the radical

$$\sqrt{176}$$

A $4\sqrt{13}$

B $4\sqrt{12}$

C $4\sqrt{11}$

D $6\sqrt{12}$

E $6\sqrt{13}$

32 Simplify the radical

$$\sqrt{80}$$

A $2\sqrt{6}$

B 2

C $3\sqrt{2}$

D $2\sqrt{3}$

E $4\sqrt{5}$

33 Convert the radical to a fractional exponent

$$\frac{1}{\sqrt[3]{5r^2}}$$

A $5^{-\frac{1}{3}} \cdot r^{-\frac{1}{3}}$

B $5^{-\frac{1}{3}} \cdot r^{-\frac{2}{3}}$

C $20^{-\frac{1}{3}} \cdot r^{-\frac{2}{3}}$

D $5^{\frac{1}{3}} \cdot r^{\frac{2}{3}}$

E $15^{-\frac{1}{3}} \cdot r^{-\frac{2}{3}}$

34 Simplify the radical

$$\sqrt[3]{3^3 \cdot t^3 \cdot t^3 \cdot r^3}$$

A $t^4 r$

B $3t^2 r$

C $6tr^2$

D $6tr\sqrt[3]{4}$

E $t^3 r$

35 Simplify the radical

$$\sqrt[3]{2^3 \cdot 2^3 \cdot 2 \cdot m^2 \cdot z}$$

A $4\sqrt[3]{2m^2 z}$

B $5\sqrt[3]{4mz}$

C $3\sqrt[3]{m^2 z^2}$

D $2\sqrt[3]{5m^3 z^3}$

E $\sqrt[3]{mz^3}$

36 Simplify the radical

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

A $5mt$

B $3m^2 t$

C $3mt^2$

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

E $4m^2 t^2$

Name



Radicals - Simplifying Advanced

37 Simplify the radical

$$\sqrt[3]{8w^6z^6}$$

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

38 Convert the fractional exponent to a radical

$$2^{-\frac{1}{3}} \cdot y^{-\frac{1}{3}}$$

A $\frac{1}{\sqrt[3]{2y}}$	B $\frac{1}{\sqrt[3]{y^3}}$	C $\frac{1}{\sqrt[3]{5y^2}}$
D $3\sqrt[3]{y}$	E $\frac{1}{\sqrt[3]{3y}}$	

39 Simplify the radical.

$$\sqrt{467-62}$$

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

40 Simplify the radical.

$$3+\sqrt{11+17}$$

A $3+\sqrt{9}$	B $3+\sqrt{10}$
C $3+2\sqrt{4}$	D $3+2\sqrt{7}$
E $3+5\sqrt{3}$	

41 Simplify the radical.

$$5\sqrt{75-12}$$

A $15\sqrt{9}$	B $15\sqrt{4}$
C $11\sqrt{3}$	D $15\sqrt{7}$
E $15\sqrt{5}$	

42 Simplify the radical

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

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

43 Simplify the radical

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

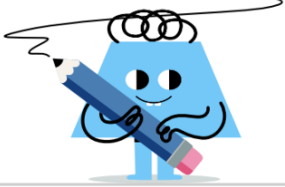
A $5\sqrt[3]{4}$	B 1	C 3
D 2	E $\sqrt[3]{2}$	

44 Simplify the radical

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

A 6	B 5
C 1	D $3\sqrt[3]{2}$

Name



Radicals - Simplifying Advanced

45 Simplify the radical

$$\sqrt[3]{3^3 \cdot 7}$$

A $3\sqrt[3]{7}$	B $6\sqrt[3]{10}$
C $\sqrt[3]{5}$	D $4\sqrt[3]{5}$
E $\sqrt[3]{9}$	

46 What integer does this radical expression simplify to?

$$\sqrt{10 \div \frac{2}{5}}$$

A 7	B 11	C 4
D 1	E 5	F 3

47 What integer does this radical expression simplify to?

$$\sqrt{10 \div \frac{6}{15}}$$

A 10	B 6	C 11
D 2	E 3	F 5

48 What does this radical expression simplify to?

$$\sqrt{28 \div \frac{100}{7}}$$

A $\frac{1}{2}$	B $\frac{7}{5}$
C $\frac{7}{4}$	D $\frac{4}{13}$

49 What does this radical expression simplify to?

$$\sqrt{6 \div \frac{726}{9}}$$

A $\frac{1}{5}$	B $\frac{3}{11}$	C $\frac{1}{20}$
D $\frac{5}{8}$	E $\frac{1}{2}$	

50 What integer does this radical expression simplify to?

$$\sqrt{\frac{44}{3} \div \frac{4}{33}}$$

A 10	B 18	C 11
D 19	E 6	F 8

51 What integer does this radical expression simplify to?

$$\sqrt{\frac{132}{16} \div \frac{3}{44}}$$

A 2	B 12	C 11
D 9	E 1	F 3

52 What does this radical expression simplify to?

$$\sqrt{\frac{6}{22} \div \frac{33}{4}}$$

A $\frac{3}{16}$	B $\frac{2}{19}$	C $\frac{2}{11}$
D $\frac{5}{24}$	E $\frac{4}{19}$	

Name



Radicals - Simplifying Advanced

53 What does this radical expression simplify to?

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

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

54 What integer does this radical expression simplify to?

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

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

55 What integer does this radical expression simplify to?

$$\sqrt[3]{64^2}$$

A	B	C
13	9	16
D	E	F
10	18	11

56 What integer does this radical expression simplify to?

$$\frac{\sqrt{32^2}}{16}$$

A	B	C
4	3	8
D	E	F
2	11	7

57 What integer does this radical expression simplify to?

$$\frac{\sqrt[3]{16^3}}{8}$$

A	B	C
8	5	1
D	E	F
6	2	11

58 What integer does this radical expression simplify to?

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

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

59 What integer does this radical expression simplify to?

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

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

60 Simplify the radical

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

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

Name



Radicals - Simplifying Advanced

61 Simplify the radical $\sqrt[3]{125}$

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

62 Simplify the radical $\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$

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

63 Simplify the radical $\sqrt[3]{3 \cdot 3 \cdot 3 \cdot 7}$

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

64 Simplify the radical $\sqrt[3]{16}$

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

65 Simplify the radical $\sqrt[3]{40}$

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

66 Simplify the radical. $\sqrt[3]{111 + 105}$

A 9	B 7
C 6	D 4

67 Simplify the radical. $\sqrt[3]{32 + 103}$

A $2\sqrt[3]{7}$	B $4\sqrt[3]{6}$
C $\sqrt[3]{3}$	D $3\sqrt[3]{5}$

68 Simplify the radical. $2 + \sqrt[3]{184 + 32}$

A 8	B $2 + \sqrt[3]{2}$
C 11	D 6
E $2 + \sqrt[3]{4}$	

Name



Radicals - Simplifying Advanced

69 Simplify the radical.

$$2+\sqrt[3]{12+12}$$

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

70 Simplify the radical.

$$2\sqrt[3]{285-69}$$

A $11\sqrt[3]{4}$	B 12
C 14	D 15
E $12\sqrt[3]{4}$	

71 Simplify the radical.

$$2\sqrt[3]{247+50}$$

A $5\sqrt[3]{9}$	B $6\sqrt[3]{11}$
C $7\sqrt[3]{8}$	D $4\sqrt[3]{11}$
E $9\sqrt[3]{14}$	

72 Simplify the radical

$$\sqrt[3]{2\cdot2\cdot2\cdot2\cdot2\cdot2\cdot11\cdot w\cdot w\cdot w\cdot w\cdot m\cdot m}$$

A	$3w^3\sqrt[3]{12wm}$
B	$5w\sqrt[3]{13wm}$
C	$4w\sqrt[3]{11wm^2}$
D	$w\sqrt[3]{14w^3m^3}$

73 Simplify the radical

$$\sqrt[3]{448y^4q^3}$$

A $7y^3q\sqrt[3]{3y^3}$	B $yq\sqrt[3]{4y}$
C $5y^2q\sqrt[3]{4y^2}$	D $yq^3\sqrt[3]{7y^2}$
E $4yq\sqrt[3]{7y}$	

74 Convert the radical to a fractional exponent

$$\sqrt[3]{11b^5d^4}$$

A	$11^{\frac{1}{2}}\cdot b^{\frac{5}{2}}\cdot d^{\frac{4}{2}}$
B	$44^{\frac{1}{3}}\cdot b^{\frac{5}{3}}\cdot d^{\frac{4}{3}}$
C	$11^{\frac{1}{3}}\cdot b^{\frac{5}{3}}\cdot d^{\frac{3}{3}}$
D	$11^{\frac{1}{3}}\cdot b^{\frac{5}{3}}\cdot d^{\frac{4}{3}}$

75 What integer does this radical expression simplify to?

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

A 1	B 9	C 2
D 4	E 10	F 7

76 What integer does this radical expression simplify to?

$$\frac{\sqrt{125^2}}{\sqrt[3]{125^2}}$$

A 3	B 7	C 4
D 5	E 9	F 12

Name



Radicals - Simplifying Advanced

77 Convert the radical to a fractional exponent

$$\frac{1}{\sqrt[3]{2r^4n^4}}$$

A
$$2^{-\frac{1}{3}} \cdot r^{-\frac{4}{3}} \cdot n^{-\frac{4}{3}}$$

B
$$2^{\frac{1}{3}} \cdot r^{\frac{4}{3}} \cdot n^{\frac{4}{3}}$$

C
$$6^{-\frac{1}{3}} \cdot r^{-\frac{4}{3}} \cdot n^{-\frac{4}{3}}$$

D
$$2^{-\frac{1}{3}} \cdot r^{-\frac{5}{3}} \cdot n^{-\frac{6}{3}}$$

78 Convert the fractional exponent to a radical

$$3^{\frac{1}{3}} \cdot m^{\frac{4}{3}} \cdot b^{\frac{4}{3}}$$

A
$$2m^3b\sqrt[3]{4mb}$$

B
$$mb^3\sqrt[3]{mb}$$

C
$$\frac{1}{2m^2b\sqrt[3]{m^2b}}$$

D
$$\sqrt[3]{3m^4b^4}$$

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

79 Convert the fractional exponent to a radical

$$5^{-\frac{1}{3}} \cdot c^{-\frac{4}{3}} \cdot r^{-\frac{5}{3}}$$

A
$$c^3r\sqrt[3]{4cr^3}$$

B
$$\frac{1}{cr^3\sqrt[3]{5c^3r^3}}$$

C
$$\frac{1}{\sqrt[3]{5c^4r^5}}$$

D
$$\frac{1}{c^3r\sqrt[3]{8cr^2}}$$

E
$$\frac{1}{cr\sqrt[3]{6cr^3}}$$

80 What does this radical expression simplify to?

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

A $\frac{43}{23}$

B $\frac{8}{9}$

C $\frac{61}{49}$

D 5

E $\frac{173}{51}$