

Notes: Simplify Non-Perfect Square Roots

WHAT IS A RADICAL?

WHAT ARE THE TYPES OF RADICALS?

Square Root	
Cube Root	
Fourth Root	
Fifth Root	

Square Roots: Simplify the following perfect squares.
Refer to the perfect squares table if needed.

PERFECT SQUARES TABLE

1. $\sqrt{25}$	2. $\sqrt{64}$	3. $\sqrt{100}$
4. $\sqrt{49}$	5. $\sqrt{81}$	6. $\sqrt{-25}$
7. $\sqrt{1}$	8. $\sqrt{\frac{9}{100}}$	9. $\sqrt{\frac{36}{121}}$

x	x ²
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81
10	100
11	121
12	144
13	169
14	196
15	225
16	256
17	289
18	324
19	361
20	400
21	441
22	484
23	529
24	576
25	625

SIMPLIFY NON-PERFECT SQUARE ROOTS

Simplify the following non-perfect squares. Refer to the perfect squares table if needed.

10. $\sqrt{32}$

11. $\sqrt{98}$

12. $\sqrt{12}$

13. $\sqrt{24}$

14. $\sqrt{63}$

15. $\sqrt{150}$

16. $\sqrt{245}$

17. $\sqrt{72}$

18. $\sqrt{8}$

Simplify the following non-perfect squares. Refer to the perfect squares table if needed.

19. $5\sqrt{8}$

20. $3\sqrt{28}$

21. $4\sqrt{20}$

22. $-3\sqrt{32}$

23. $-7\sqrt{50}$

24. $2\sqrt{100}$

25. $15\sqrt{24}$

26. $-5\sqrt{108}$

27. $3x\sqrt{175}$

PERFECT SQUARES TABLE

x	x ²
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81
10	100
11	121
12	144
13	169
14	196
15	225
16	256
17	289
18	324
19	361
20	400
21	441
22	484
23	529
24	576
25	625

A. ___ Simplify Non-Perfect Square Roots

Simplify each expression. Rewrite using only positive exponents.

1. $\sqrt{20}$

2. $\sqrt{48}$

3. $\sqrt{8}$

4. $\sqrt{128}$

5. $\sqrt{72}$

6. $\sqrt{12}$

7. $\sqrt{56}$

8. $\sqrt{288}$

9. $\sqrt{80}$

10. $\sqrt{75}$

11. $\sqrt{400}$

12. $\sqrt{30}$

13. $\sqrt{169}$

14. $\sqrt{250}$

15. $\sqrt{27}$

16. $10\sqrt{1000}$

17. $6\sqrt{10,000}$

18. $-12\sqrt{40}$

19. $-8\sqrt{63}$

20. $5\sqrt{24}$

21. $9\sqrt{18}$

22. $4\sqrt{243}$

23. $-6\sqrt{54}$

24. $7\sqrt{45}$

25. $16\sqrt{90}$

26. $5\sqrt{28}$

27. $10\sqrt{192}$

28. $-2\sqrt{128}$

29. $-4x\sqrt{50}$

30. $3x\sqrt{245}$