

1. Simplify without a calculator.

$$16^{\frac{1}{2}}$$

2. Simplify without a calculator.

$$16^{\frac{1}{2}}$$

3. Simplify without a calculator.

$$16^{\frac{1}{4}}$$

4. Simplify without a calculator.

$$256^{\frac{1}{4}}$$

5. Simplify:  $(-64)^{1/3}$

6. Simplify:  $8^{1/3}$

7. Simplify:  $(-64)^{1/3}$

8. Simplify:  $(-27)^{1/3}$

9. Simplify without a calculator.

$$32^{\frac{4}{5}}$$

10. Simplify without a calculator.

$$64^{\frac{5}{6}}$$

11. Simplify without a calculator.

$$64^{\frac{2}{3}}$$

12. Simplify without a calculator.

$$32^{\frac{4}{5}}$$

13. Simplify:  $81^{3/2}$

14. Simplify:  $64^{3/2}$

15. Simplify:  $81^{3/2}$

16. Simplify:  $100^{3/2}$

17. Simplify:  $125^{-2/3}$

18. Simplify:  $27^{-2/3}$

19. Simplify:  $(-125)^{-2/3}$

20. Simplify:  $(-64)^{-2/3}$

21. Simplify without a calculator.

$$625^{\frac{3}{4}}$$

22. Simplify without a calculator.

$$625^{\frac{3}{4}}$$

23. Simplify without a calculator.

$$625^{\frac{3}{4}}$$

24. Simplify without a calculator.

$$625^{\frac{3}{4}}$$

25. Simplify:  $(-16)^{5/2}$

26. Simplify:  $(-4)^{1/2}$

27. Simplify:  $(-16)^{5/2}$

28. Simplify:  $(-16)^{5/2}$

29. Simplify:  $(-9)^{3/2}$

30. Simplify without a calculator.

$$8^{\frac{4}{3}}$$

31. Simplify without a calculator.

$$8^{\frac{4}{3}}$$

32. Simplify without a calculator.

$$8^{\frac{5}{3}}$$

33. Simplify without a calculator.

$$\frac{5}{8^3}$$

34. Simplify without a calculator.

$$\frac{1}{16^4}$$

35. Simplify:  $27^{-2/3}$

36. Simplify without a calculator.

$$\frac{5}{8^3}$$

37. Simplify without a calculator.

$$\frac{4}{8^3}$$

**Answer Key**

1. 4
2. 4
3. 2
4. 4
5. -4
6. 2
7. -4
8. -3
9. 16
10. 32
11. 16
12. 16
13. 729
14. 512
15. 729
16. 1000
17.  $\frac{1}{25}$
18.  $\frac{1}{9}$
19.  $\frac{1}{25}$
20.  $\frac{1}{16}$
21. 125
22. 125
23. 125
24. 125
25. Not a real number
26. Not a real number
27. Not a real number
28. Not a real number
29. Not a real number
30. 16
31. 16
32. 32
33. 32
34. 2
35.  $\frac{1}{9}$
36. 32
37. 16