

Indices

Evaluate:

1. 3^2

2. 2^5

3. 10^6

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

5. $\frac{3^2}{2^3}$

6. $\frac{1}{10^3}$

7. 3^{-2}

8. 2^{-3}

9. 10^{-2}

10. $3^2 \times 2^{-2}$

11. $4^{\frac{1}{2}}$

12. $9^{\frac{3}{2}}$

13. $16^{\frac{1}{2}} \times 3^2$

14. $5^2 \times 64^{\frac{1}{2}}$

15. $27^{\frac{1}{3}}$

16. $64^{\frac{1}{3}}$

17. $125^{\frac{2}{3}}$

18. $\left(\frac{1}{16}\right)^{\frac{1}{2}}$

19. $4^{\frac{1}{2}}$

20. $25^{\frac{1}{2}}$

21. $125^{\frac{1}{3}}$

22. $\left(\frac{1}{16}\right)^{-\frac{1}{2}}$

23. $\left(\frac{16}{25}\right)^{-\frac{1}{2}}$

24. $(125 \times 27)^{-\frac{1}{3}}$

25. $\left(\frac{8^2}{27}\right)^{\frac{1}{3}}$

Simplify:

26. $a \times a^2$

27. $ab \times ba$

28. $a^2 \div a$

29. $ab \div a$

30. $a^2 b^2 \div ab$

31. $a^2 b \div a$

32. $a^2 b \div ab^2$

33. $(ab)^2 \div ab$

34. $abc \times ab$

35. $abc \div ab$

36. $\frac{xy}{x^2}$

37. $\frac{x^2 y^2}{xy}$

38. $\frac{x^2 y}{xy^2}$

39. $\frac{x^3 y^2}{xy^2}$

40. $(x^2 y^4)^{\frac{1}{2}}$

41. $(x^2 y^4)^2$

42. $\left(\frac{x^4}{y^2}\right)^{\frac{1}{2}}$

43. $(x^2)^{-\frac{1}{2}}$

44. $\left(\frac{x^2}{y^2}\right)^{-\frac{1}{2}}$

45. $\left(\frac{pq^2 r}{qr}\right)^{\frac{1}{2}}$

46. $\sqrt{\frac{p^2 q^4 r^2}{p^4 qr}}$

47. $\frac{p^{-2} q^3 r}{pq^{-1} r^2}$

48. $(p^{-4} q^{-2})^{\frac{1}{2}}$

49. $(p^{-2} q^4 r^{-2})^{\frac{1}{2}}$

50. $\left(\frac{p^{-1} q^3 r^{-2}}{p^{-3} q^{-1}}\right)^{\frac{1}{2}}$

Indices (Answers)

Evaluate:

1. 3^2 9

2. 2^5 32

3. 10^6 1,000,000

4. $\frac{1}{2^3}$ 1/8

5. $\frac{3^2}{2^3}$ 9/8

6. $\frac{1}{10^3}$ 1/1000

7. 3^{-2} 1/9

8. 2^{-3} 1/8

9. 10^{-2} 1/100

10. $3^2 \times 2^{-2}$ 9/4

11. $4^{\frac{1}{2}}$ 2

12. $9^{\frac{3}{2}}$ 27

13. $16^{\frac{1}{2}} \times 3^2$ 36

14. $5^2 \times 64^{\frac{1}{2}}$ 200

15. $27^{\frac{1}{3}}$ 3

16. $64^{\frac{1}{3}}$ 4

17. $125^{\frac{2}{3}}$ 25

18. $\left(\frac{1}{16}\right)^{\frac{1}{2}}$ 1/4

19. $4^{\frac{1}{2}}$ 1/2

20. $25^{\frac{1}{2}}$ 1/5

21. $125^{\frac{1}{3}}$ 1/5

22. $\left(\frac{1}{16}\right)^{\frac{1}{2}}$ 4

23. $\left(\frac{16}{25}\right)^{\frac{1}{2}}$ 5/4

24. $(125 \times 27)^{\frac{1}{3}}$ 1/15

25. $\left(\frac{8^2}{27}\right)^{\frac{1}{3}}$ 4/3

Simplify:

26. a^3

27. $a^2b^2 = (ab)^2$

28. a

29. b

30. ab

31. ab

32. $\frac{a}{b}$

33. ab

34. a^2b^2c

35. c

36. $\frac{y}{x}$

37. xy

38. $\frac{x}{y}$

39. x^2

40. xy^2

41. x^4y^8

42. $\frac{x^2}{y}$

43. $\frac{1}{x}$

44. $\frac{y}{x}$

45. \sqrt{pq}

46. $\frac{\sqrt{q^3r}}{p}$

47. $\frac{q^4}{p^3r}$

48. $\frac{1}{p^2q}$

49. $\frac{pr}{q^2}$

50. $\frac{r}{pq^2}$