Year 9 Indices and Surds – Mixed Practice

HappyKids.fit

Year 9 · Maths · Irrational Numbers, Indices and Surds · Mixed practice · 30 questions

Name _____ **Date** _____

A. Mixed practice (mixed order)

1. Write 2^{-3} as a fraction.

Answer _____

2. Write $11^{5} \div 11^{-2}$ as a single power of 11.

Answer _____

3. Write $(2/7)^{-1}$ as a fraction.

Answer _____

4. Find n: $2^{n} = 1/32$

Answer _____

5. Farah says the square root of a prime number is always irrational. Is Farah right? Explain.

Answer _____

6. Between which two consecutive whole numbers does $\sqrt[3]{544}$ lie?

Answer _____

7. Write $9^{8} \times 9^{-7}$ as a single power of 9.

Answer _____

8. Find $\sqrt{147}$ correct to 1 decimal place, without a calculator. Use squares of decimals to check.

Answer _____

9. Hana says $2^4 \div 2^{-2} = 2^2$. Spot the mistake and give the correct answer.

Answer _____

10. Write these numbers in order of size, smallest first: $\sqrt{28}$, $\sqrt[3]{160}$, 17/3, 5.2

Answer _____

11. A video file uses 2^{14} bytes. A memory card holds 2^{33} bytes. How many of these files fit on the card? Give your answer as a power of 2.

Answer _____

12. Find n: $4^n = 1/64$

Answer _____

13. Write $(3/7)^{-1}$ as a fraction. Answer _____

14. Find $\sqrt{102}$ correct to 1 decimal place, without a calculator. Use squares of decimals to check.

Answer _____

15. Jade says $4^{-2} = -16$. Spot the mistake and give the correct answer.

Answer _____

16. Which of these numbers are irrational? $\sqrt[3]{1000}$, $1 + \sqrt{2}$, $7/9$, $\sqrt{100}$, $\sqrt[3]{50}$

Answer _____

17. Farah says $\sqrt{50}$ lies between 7 and 8. Is Farah right? Explain.

Answer _____

18. Between which two consecutive whole numbers does $\sqrt[3]{527}$ lie?

Answer _____

19. Write $4^2 \times 4^{-9} \div 4^6$ as a single power of 4. Answer _____

20. Between which two consecutive whole numbers does $\sqrt{115}$ lie?

Answer _____

21. Find n: $3^n \div 3^6 = 3^{-6}$

Answer _____

22. Write $(4/5)^{-2}$ as a fraction. Answer _____

23. Gus says 10^{-2} is equal to 0.01. Is Gus right? Explain.

Answer _____

24. Write $2^7 \times 2^{-6} \div 2^5$ as a single power of 2. Answer _____

25. How many whole numbers n have $\sqrt{n}$ between 5 and 6? Explain, and give a rule for $\sqrt{n}$ between any whole number a and a + 1.

Answer _____

26. Which of these numbers are irrational? 3^{-1}, $\sqrt[3]{100}$, 0.73, $\sqrt{74}$, $\sqrt[3]{8}$

Answer _____

27. Write these numbers in order of size, smallest first: $\sqrt{99}$, 9.9, $\sqrt[3]{770}$, 28/3

Answer _____

28. Find $\sqrt{74}$ correct to 1 decimal place, without a calculator. Use squares of decimals to check.

Answer _____

29. Lina says $\sqrt{(64 + 225)} = \sqrt{64} + \sqrt{225} = 23$. Spot the mistake and give the correct answer.

Answer _____

30. A square field has an area of 251 m². Find the length of one side, correct to 1 decimal place, by trying squares of decimals.

Answer _____