Year 8 Prime Factors and Rounding – Mixed Practice

ANSWER KEY HappyKids.fit

Answers and worked solutions · 30 questions

A. Mixed practice (mixed order)

1. **662**

÷ 0.01 is the same as × 100

= 662

2. **0.00045**

The first significant figure is the first non-zero digit

Keep 2, look at the next digit, then fill with zeros if needed

= 0.00045

3. **3730**

÷ 0.1 is the same as × 10

= 3730

4. **0.036**

The first significant figure is the first non-zero digit

Keep 2, look at the next digit, then fill with zeros if needed

= 0.036

5. **$2 \times 3 \times 7 \times 11$**

$462 = 2 \times 231$, $231 = 3 \times 77$, $77 = 7 \times 11$...

$462 = 2 \times 3 \times 7 \times 11$

6. **80**

The first significant figure is the first non-zero digit

Keep 1, look at the next digit, then fill with zeros if needed

= 80

7. **1.46**

× 0.1 is the same as ÷ 10

= 1.46

8. **$2^2 \times 3 \times 5 \times 11$**

$660 = 2 \times 330$, $330 = 2 \times 165$, $165 = 3 \times 55$...

$660 = 2^2 \times 3 \times 5 \times 11$

9. **7.1**

× 0.1 is the same as ÷ 10

= 7.1

10. **$2^2 \times 3^2 \times 11$**

$396 = 2 \times 198$, $198 = 2 \times 99$, $99 = 3 \times 33$...

$396 = 2^2 \times 3^2 \times 11$

11. 0.75

$\approx (50 \times 0.06) \div 4$

$= 3 \div 4 = 0.75$

12. HCF = $2^2 \times 3 = 12$; LCM = $2^2 \times 3 \times 7^2 = 588$

HCF: primes in both, smaller powers: 12

LCM: every prime, larger powers: 588

13. Leading zeros are not significant: start counting at the first non-zero digit. 0.0014045 = 0.0014 (2 s.f.).

Error: the zeros after the decimal point were counted

The first significant figure is the first non-zero digit

$= 0.0014$

14. 0.00019

The first significant figure is the first non-zero digit

Keep 2, look at the next digit, then fill with zeros if needed

$= 0.00019$

15. HCF = $3 \times 5 = 15$; LCM = $3^3 \times 5^2 \times 7^2 = 33\,075$

HCF: primes in both, smaller powers: 15

LCM: every prime, larger powers: 33 075

16. 16 cm

$64 = 2^6$, $80 = 2^4 \times 5$, $112 = 2^4 \times 7$

HCF = $2^4 = 16$

17. 900 000

The first significant figure is the first non-zero digit

Keep 1, look at the next digit, then fill with zeros if needed

$= 900\,000$

18. Leading zeros are not significant: start counting at the first non-zero digit. 0.001517 = 0.0015 (2 s.f.).

Error: the zeros after the decimal point were counted

The first significant figure is the first non-zero digit

$= 0.0015$

19. 0.875

$\approx (70 \times 0.05) \div 4$

$= 3.5 \div 4 = 0.875$

20. Yes. The HCF divides each number, and each number divides the LCM, e.g. HCF(12, 18) = 6 and LCM = 36.

Try an example

The HCF divides each number, and each number divides the LCM, e.g. HCF(12, 18) = 6 and LCM = 36.

Decide

21. 928

÷ 0.01 is the same as × 100

= 928

22. $2^2 \times 3 \times 7 \times 11$

924 = 2 × 462, 462 = 2 × 231, 231 = 3 × 77…

924 = $2^2 \times 3 \times 7 \times 11$

23. No. The significant figures start at the 3: 0.0305 → 0.031 (2 s.f.).

Try an example

The significant figures start at the 3: 0.0305 → 0.031 (2 s.f.).

Decide

24. 81 000

The first significant figure is the first non-zero digit

Keep 2, look at the next digit, then fill with zeros if needed

= 81 000

25. HCF = 7; LCM = $2^3 \times 3 \times 5 \times 7 = 840$

HCF: primes in both, smaller powers: 7

LCM: every prime, larger powers: 840

26. $3^2 \times 7 \times 11$

693 = 3 × 231, 231 = 3 × 77, 77 = 7 × 11…

693 = $3^2 \times 7 \times 11$

27. Leading zeros are not significant: start counting at the first non-zero digit. 0.0092574 = 0.0093 (2 s.f.).

Error: the zeros after the decimal point were counted

The first significant figure is the first non-zero digit

= 0.0093

28. 0.4

≈ (50 × 0.04) ÷ 5

= 2 ÷ 5 = 0.4

29. 8.65

× 0.1 is the same as ÷ 10

= 8.65

30. 18 sets

36 = $2^2 \times 3^2$, 54 = 2×3^3, 90 = $2 \times 3^2 \times 5$

HCF = $2 \times 3^2 = 18$