

# Answer Key | Lower Secondary Stage (6-8)

1<sup>st</sup> Semester | 2023-2024

**Subject:** Math

**Chapter:** 1

**Objectives:**

- To review the answer key for the quiz material.

## Student book

### Exercise 1D

- 1 a 81      b 11, -11      c 196      d 0  
e 169      f 8, -8
- 2 a 12.96      b 4.1, -4.1      c 0.1024      d 0.4, -0.4  
e 129.96      f 0.8, -0.8
- 3  $(-10)^2 = 100$  and  $-10^2 = -100$
- 4 a 81      b -9      c 0.25      d -2.25
- 5 a 8      b -27      c 10      d -64  
e -1      f -5
- 6 a 3.375      b -32.768      c -1.7      d -0.1
- 7 a 1.3      b 2.5, -2.5      c 9.6
- 8 a 2.8cm      b 7.8m      c 12.5 mm
- 9 a  $10.24\text{m}^2$       b  $47.61\text{mm}^2$       c  $2.89\text{cm}^2$
- 10 1.4m
- 11 The answer should be negative

Question	Estimate without using a calculator	Answer correct to 2 d.p.
$-\sqrt{26.1}$	The answer is between the integers -5 and -6	-5.11
$\sqrt[3]{26}$	The answer is between the integers 2 and 3	2.96
$\sqrt[3]{12.3}$	The answer is between the integers 2 and 3	2.31

- 13 a  $\frac{4}{7}$       b  $\frac{9}{10}$       c  $\frac{5}{8}$
- 14 a 0.6      b 0.9      c 1.2      d 0.4  
e -0.5
- 15 Write as  $\sqrt{\frac{64}{100}}$  (answer is 0.8)

### Exercise 1E

- 1 a  $3^5$       b  $7^7$       c  $5^8$       d  $-2^4$
- 2 a  $2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$   
b  $2^6 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 64$   
c  $4^4 = 4 \times 4 \times 4 \times 4 = 256$   
d  $5^4 = 5 \times 5 \times 5 \times 5 = 625$   
e  $1024 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^{10}$   
f  $100\,000 = 10 \times 10 \times 10 \times 10 \times 10 = 10^5$
- 3 a 104.8576      b 3.71293      c 113.379904  
d 1.61051      e -16807
- 4 a 1      b -1      c 1      d -1  
e Odd powers give -1 even powers give 1  
f  $(-1)^{20} = 1$  and  $(-1)^{37} = -1$
- 5  $99^{50}$  on most calculators
- 6  $9999^{25}$  on most calculators

### Exercise 1F

- 1 b 625      c 128      d 2      e 2  
f 3      g 4      h 4      i 6
- 2 a 6      b 8      c 6      d 10
- 3 No, he should not have multiplied the bases, the correct answer is  $2^7$ .
- 4 a  $6^{10}$       b  $7^{23}$       c  $3^{17}$       d  $10^5$
- 5 a  $2^{13}$   
b 72 index form not possible as bases not the same  
c 3600 index form not possible as bases not the same  
d  $4^{11}$
- 6 a 2      h 4      c 6
- 7 She has divided the powers instead of subtracting them, the correct answer is  $2^8$ .
- 8 a  $2^3$       b  $3^3$       c  $4^5$       d  $7^5$       e  $9^6$       f  $5^4$
- 9 a  $2^0$       b  $3^0 = 1$       c  $7^0 = 1$       d  $9^0 = 1$
- 10 a 1      b 1      c 1      d 1      e 1      f 1
- 11 a  $6^1 = 6$       b  $5^3$       c  $12^3$       d  $7^4$   
e  $20^5$       f  $q^1 = q$       g  $b^1 = b$       h  $y^{4-m}$   
i  $4p^4$       j  $3x^4$       k  $5m^8$

## Homework book

### 1D

- 1 a 4      b 9      c 49      d 225  
e  $-4$       f 9      g 49      h 225
- 2 a 4 and  $-4$       b 9 and  $-9$   
c 3 and  $-3$       d 13 and  $-13$
- 3 a 0.2601      b 13.69      c 28.5156  
d 723.61      e 2.6 or  $-2.6$       f 0.34 or  $-0.34$   
g 52 or  $-52$       h 3.5 or  $-3.5$
- 4 a 10.89      b 4.2
- 5 a 4      b  $-4$       c 216      d  $-216$   
e  $-27$       f  $-1000$       g 0      h  $-8000$
- 6 a 3      b 2      c  $-4$       d  $-10$
- 7 a 1.728      b 15.625      c  $-226.981$       d  $-0.027$   
e 4.2      f 0.7      g 16      h 2.4
- 8 a 19.683      b 3.1
- 9 a  $\frac{3}{7}$       b  $\frac{5}{11}$       c  $\frac{2}{3}$   
d 0.8      e 1.3      f 0.5

### 1E-1F

- 1 a  $8^5$       b  $4^7$       c  $7^6$       d  $(-2)^4$   
e  $(-5)^4$       f  $2^3 \times 3^2$       g  $2^2 \times 7^3$       h  $3^2 \times 5^4$
- 2 a 81      b 16      c 1      d 10000  
e 32      f 243      g 256      h 256  
i  $-32$       j 81      k 1      l 625
- 3 a 2.07      b 2293.45      c 148.04      d 92.35  
e 2.86      f  $-9161.33$       g 113.38      h  $-2751.26$
- 4 a  $10^3$       b  $3^{11}$       c Doesn't simplify  
d  $7^6$       e  $18^8$       f  $p^9$       g  $6x^{11}$   
h  $3m^4$
- 5 a 1      b 1      c 1
- 6 a 400      b 288      c 16 000      d 450