

INTERNATIONAL INDIAN SCHOOL

BURAIDAH

Worksheet For The Academic Year 2026-27

CLASS: VIII SUBJECT: Mathematics DATE: 12/05/2026

LESSON-2 Power Play

1) _____ numbers help us to express very big and very small numbers

In an easy way.

2) $(-1)^{73} =$ _____

3) $0^{50} =$ _____

4) If the thickness of a sheet of paper is 't' mm , then its thickness after 25 folds will be _____.

5) Find the value of:

a) $(-2)^5$ b) $(-10)^3$ c) $(-2)^{-4}$ d) $\frac{1}{10^{-5}}$ e) $(\frac{-3}{5})^3$ f) 5^0

6) Express in the exponential form:

a) $a \times a \times a \times a \times b \times b$ b) $3 \times 3 \times 3 \times 5 \times 5 \times 5 \times 5$

c) $-2 \times -2 \times -2 \times 7 \times 7$ d) $\frac{5}{7} \times \frac{5}{7} \times \frac{5}{7} \times \frac{5}{7}$

7) Express as exponents:

a) 144 b) 750 c) 343 d) 5625

8) Evaluate:

a) $(3^{-1} \div 4^{-1})^2$ b) $(2^{-1} \times 5^{-1})^{-1}$ c) $(4^{-1} \div 8^{-1})^{-1} \div (\frac{2}{3})^{-1}$

9) Simplify:

a) $(b^2)^4 \times b^0$ b) $(a^8 \times a^{-5})^0$ c) $\frac{a^{-3} \times b^{10} \times c^8 \times b \times c^8}{b^{-10} \times c^6}$

d) $\frac{2^{-6} \times 2^4 \times 3^5}{3^{12} \times 2^3}$ e) $\frac{9 \times 6^7 \times 2^5}{8^2 \times 3^6}$

10) Express in scientific notation:

a) 190000000 b) 93650021.3 c) 9000000000000

d) 0.0000000934 e) 0.000003703 f) 1070000

- 11) There are 5 T-Shirts , 4 Shorts and 2 pairs of shoes. Find the number of combinations possible.
- 12) A six digit secret code is used in a lock with digits from 0 to 9 . Find the number of codes possible.
- 13) Passcode number on a question paper consists of 4 places alphanumeric. (digits from 0 to 9 and letters from A to Z) Find the number of such codes Possible.
- 14) Use the Laws and simplify:
- a) $2^4 \times 3^4$ b) $4^5 \div 20^5$ c) $3^4 \div 3^2$ d) $(3^2)^3$ e) $5^2 \times 5^3$
- 15) If $15^2 = 225$, find a) $(0.15)^2$ b) $(1.5)^2$ c) $(0.015)^2$
- 16) Write the expanded exponential form/ powers of 10:
- a) 100.213 b) 16.0072 c) 723.1465
- 17) Simplify and express with positive powers:
- a) $(4^2)^{-3}$ b) $3^{-4} \times 2^{-4}$ c) $(7^{-8} \div 7^5) \times 7^2$
- 18) Write as power of power in two different ways:
- a) 192^2 b) 36^3 c) 27^5
- 19) Which is greater?
- a) 3^8 or 8^3 b) 25^5 or 5^{25} c) 100^7 or 7^{100}
- 20) Write as powers of prime factors:
- a) 32^{-3} b) 1125^7
- 21) Answer the following looking at the power line:
- a) $65536 \times \frac{1}{16}$ b) 256×64 c) $16384 \div 1024$
- d) How much more is (i) 16384 than 256 (ii) 1024 than $\frac{1}{4}$
- 22) A 4-digit passcode is made using all alphabets and numbers from 0 to 5. Find the number of passcodes possible.
- 23) Write the smallest square number which is also a cube number.
- 24) Simplify: a) $3^{325} \times 3^{75}$ b) $3^{325} \div 3^{25}$ c) $(3^{200})^0$

4^8	—	65536
4^7	—	16384
4^6	—	4096
4^5	—	1024
4^4	—	256
4^3	—	64
4^2	—	16
4^1	—	4
4^0	—	1
4^{-1}	—	$\frac{1}{4}$
4^{-2}	—	$\frac{1}{16}$

25) Represent as exponential numbers:

a) 2 lakhs b) 5 billion c) 4 million

ANSWERS

2) -1 3) 0 4) $t \times 2^{25}$ 5) a) -32 b) -1000 c) $\frac{1}{16}$ d) 100000 e) $\frac{-27}{125}$ f) 1

7) a) $2^4 \times 3^2$ b) $2 \times 3 \times 5^3$ c) 7^3 d) $3^2 \times 5^4$

8) a) $\frac{16}{9}$ b) 10 c) $\frac{16}{9}$

9) a) b^8 b) 1 c) $a^{-3}b^{21}c^{10}$ d) $\frac{1}{2^5 \times 3^7}$ e) $2^6 \times 3^3$

10) a) 1.9×10^8 b) 9.36500213×10^7 c) 9×10^{12} d) 9.34×10^{-8}

e) 3.703×10^{-6} f) 1.07×10^6

11) 40 12) 10^6 13) 36^4

14) a) 6^4 b) $\frac{1}{5^5}$ c) 3^2 d) 3^6 e) 5^5

15) a) 0.0225 b) 2.25 c) 0.000225

17) a) $\frac{1}{4^6}$ b) $\frac{1}{6^4}$ c) $\frac{1}{7^{11}}$

18) a) $(8^2 \times 3)^2$ & $(2^6 \times 3)^2$ b) $(2^2 \times 3^2)^3$ & $(6^2)^3$

c) $(3^3)^5$ & $(3 \times 3^2)^5$

19) a) 3^8 b) 5^{25} c) 7^{100}

20) a) $(2^5)^{-3}$ b) $(3^2 \times 5^3)^7$

21) a) 4096 b) 16384 c) 16 d) i) 64 ii) 4096

22) 32^4

23) 64

24) a) 3^{400} b) 3^{300} c) 1

25) a) 2×10^5 b) 5×10^9 c) 4×10^6