

Exponent Worksheet – 4

1. A beverage factory has annual sales of 4 billion 950 million litre of beverage. Express this number in the standard form.

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|-----------------------|--------------------------|
| a) 4.95×10^6 | b) 4.95×10^{-6} |
| c) 49.5×10^6 | d) None of these |

2. $25.69 = 2 \times 10 + 5 \times 1 + 5 \times 10 + 8 \times 100$. Mark True/False.

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| a) True | b) False |
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3. The standard form for 0.000045 is 4.5×10^{-5} . Mark True/False.

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|---------|----------|
| a) True | b) False |
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4. The cell of amoeba double in every 30 mins. A zoologist begins with a single cell. How many cells will be in 12hr?

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|-------------|-------------|
| a) 2^{12} | b) 2^2 |
| c) 2^{24} | d) 2^{16} |

5. Evaluate $2^{-1} \left[\left(\frac{4}{3} \right)^3 + \left(\frac{3}{4} \right)^{-2} \right] \div \frac{14}{3}$ and write the result in exponential form with negative exponent.

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|--------------------------------------|-------------|
| a) $\left(\frac{3}{2} \right)^{-2}$ | b) 2^{-2} |
| c) $\left(\frac{4}{3} \right)^{-2}$ | d) 3^{-1} |

6. Simplify $\left[\left(\frac{-5}{2} \right)^{-2} \right]^3 \times \left(\frac{1}{5} \right)^{-4} \times 2^{-1} \times \frac{1}{8}$, we get ____.

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|------|---------------------------------------|
| a) 1 | b) $\left(\frac{2}{5} \right)^{-10}$ |
| c) 0 | d) $\left(\frac{5}{2} \right)^{-10}$ |

7. $\left(\frac{-4}{5} \right)^7 \times \left(\frac{-4}{5} \right)^8 \div \left(\frac{-5}{4} \right)^{-5}$ is equal to ____.

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|---------------------------------------|---------------------------------------|
| a) $\left(\frac{-5}{4} \right)^{10}$ | b) 20^7 |
| c) 5^{-10} | d) $\left(\frac{-4}{5} \right)^{10}$ |

8. If $\left(\frac{12}{13} \right)^4 \times \left(\frac{13}{12} \right)^{-8} = \left(\frac{12}{13} \right)^{2x}$, find x?

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|------|-------|
| a) 6 | b) 12 |
| c) 5 | d) 2 |

9. Express 32^{-2} as a power with base 2.

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|----------|--------------|
| a) 2^2 | b) 2^{-10} |
|----------|--------------|

c) 2^{-6}

d) 2

10. Simplify $\left(\frac{z^a}{z^b}\right)^{a+b} \times \left(\frac{z^b}{z^c}\right)^{b+c} \times \left(\frac{z^c}{z^a}\right)^{c-a}$.

a) 0

b) -1

c) 1

d) None of these

11. Simplify $\frac{(-5^{-2})^2}{(5^{-2})^5} \times \frac{(3^2)^{-3}}{(3^3)^{-2}} \times \frac{(x^{-3})^2}{(x^{-4})^3}$, then get ____.

a) $3^2 \times x^3$

b) $\frac{5^6}{x^6}$

c) 0

d) $5^6 \times x^6$

12. Find x if $\left(\frac{-25}{49}\right)^{-4} \times \left(\frac{-25}{49}\right)^5 = \left\{\left(\frac{-25}{49}\right)^2\right\}^x \times \left(\frac{-25}{49}\right)^{-2}$

a) 1

b) 0

c) $\frac{1}{7}$

d) None of these

13. Express 256^{-2} as a power with base 16.

a) 16^2

b) 16^0

c) $(16)^{-4}$

d) 16^{-2}

14. Simplify and write in exponential form of $5^{-5} \times 5^2 \div 5^{-6} + (2^2 \times 5)^2 + \left(\frac{2}{5}\right)^{-1} + 2^{-1} + \left(\frac{1}{7}\right)^{-1}$.

a) 5^4

b) $2^4 + 10$

c) $5^4 + 2^4 + 10$

d) 1

15. By what number should $\left\{\left(\frac{-7}{3}\right)^3\right\}^{-3}$ be multiplied to get $\left(\frac{-3}{7}\right)^5$.

a) $\left(\frac{-7}{3}\right)^4$

b) 21

c) 49

d) $\left(\frac{3}{-7}\right)^4$

16. Express $\frac{-1296}{28561}$ in exponential form.

a) $\left(\frac{6}{13}\right)^3$

b) $-\left(\frac{6}{13}\right)^4$

c) $\left(\frac{4}{11}\right)^5$

d) None of these

17. Express $(3^5 \div 3^8) \times 3^{-7}$ as a power of rational number with negative exponent.

a) 3^{-5}

b) 3^{-6}

c) 3^{-10}

d) 3^{-9}

18. For a fixed base i.e. 10, if the exponent decreases by 1, the number becomes ____.

- a) One-tenth of the previous number
- b) Ten times of the previous number
- c) Two hundredth of the previous number
- d) Two tenth of the previous number

19. Express the product of 2.1×10^6 and 3.1×10^{-1} in standard form.

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|-----------------------|------------------------|
| a) 6.51×10^6 | b) 0.651×10^6 |
| c) 65.1×10^6 | d) None of these |

20. Express $\frac{2.5 \times 10^6}{1.5 \times 10^{-4}}$ in standard form.

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|-----------------------|------------------------|
| a) 1.62×10^9 | b) 0.162×10^9 |
| c) 16.2×10^9 | d) None of these |