

Name: _____

Date: _____

Identify the base and exponent.

Example

a) 10^2

The base is 10 and the exponent is 2.

b) $\left(-\frac{1}{3}\right)^5$

The base is $-\frac{1}{3}$ and the exponent is 5.

Complete.

13. -7^3

The base is _____ and the exponent is _____.

Identify the base and exponent in each expression.

14. 8^{13}

15. $\left(\frac{6}{11}\right)^2$

16. $(-6)^9$

17. $\left(-\frac{5}{6}\right)^4$

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Tell whether each statement is correct. If it is incorrect, state the reason.

Example

a) $65^2 = 65 \cdot 65$

The statement is correct.

b) $6^7 = 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$

The statement is incorrect. The base is 6, not 7 and the exponent is 7, not 6.

Complete.

18. $10 \cdot 10 \cdot 10 \cdot 10 = 40^4$

The statement is _____. The base is _____, not _____.

Tell whether each statement is correct. If it is incorrect, state the reason.

19. $4^2 = 6 \cdot 6 \cdot 6$

20. $9^5 = 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9$

21. $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \left(\frac{1}{2}\right)^5$

22. $(-18) \cdot (-18) \cdot (-18) = (-18)^3$

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Write repeated multiplication using exponential notation.

Example

a) $101 \cdot 101 \cdot 101 \cdot 101 \cdot 101 \cdot 101 \cdot 101$

= 101^7

The base is 101 and the exponent is 7.

b) $(-0.8) \cdot (-0.8) \cdot (-0.8)$

= $(-0.8)^3$

The base is -0.8 and the exponent is 3.

c) $\frac{2}{5}p \cdot \frac{2}{5}p \cdot \frac{2}{5}p \cdot \frac{2}{5}p$

= $\left(\frac{2}{5}p\right)^4$

The base is $\frac{2}{5}p$ and the exponent is 4.

Complete.

23. $\frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7}$

$\frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} \cdot \frac{6}{7} =$ _____

The base is _____ and the exponent is _____.

Write in exponential notation.

24. $36 \cdot 36 \cdot 36 \cdot 36 \cdot 36$

25. $(-6.33) \cdot (-6.33) \cdot (-6.33)$

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Expand and evaluate expressions in exponential notation.*Example*

a) 1.6^2 $= 1.6 \cdot 1.6$ $= 2.56$	b) $\left(\frac{4}{7}\right)^3$ $= \frac{4}{7} \cdot \frac{4}{7} \cdot \frac{4}{7}$ $= \frac{64}{343}$	c) $(-3)^3$ $= (-3) \cdot (-3) \cdot (-3)$ $= -27$
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Complete.

26. $\left(-\frac{1}{3}\right)^3$

$$\left(-\frac{1}{3}\right)^3 = \underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

The base _____ is used as a factor _____ times.

Evaluate.

Expand and evaluate each expression.

27. $(-6)^2$

28. 19^3

29. $\left(\frac{8}{9}\right)^2$

30. $(-5.1)^3$