POWER TO THE EXPONENT

SOME MEDICAL ADVICE IS WRITTEN IN CODE AT THE BOTTOM OF THE PAGE. TO CRACK THE CODE:

Figure out the value of any expression below. Then find your answer in the code. Each time you see the answer in the code, write the letter of that problem above it. Keep working until you have decoded the message.

B = 4^2 = ◯

H = 9^2 = ◯

G = 7^2 = ◯

V = 10^2 = ◯

T = 3^3 = ◯

Y = 6^3 = ◯

K = 5^3 = ◯

F = 8^3 = ◯

W = 2^3 = ◯

C = 4^4 = ◯

I = 5^4 = ◯

U = 7^4 = ◯

D = 3^5 = ◯

A = 4^5 = ◯

S = 2^6 = ◯

N = 7^1 = ◯

R = 1^8 = ◯

E = 10^3 = ◯

O = 5^1 = ◯

L = 6^5 = ◯

EXPERT MEDICAL ADVICE

27-5 1024-100-5-625-243 27-81-1024-27 1-2401-7 243-5-8-7 512-1000-1000-7776-625-7-49

7776-5-5-125 16-5-27-81 8-1024-216-64 16-1000-512-5-1-1000 216-5-2401 256-1-5-64-64

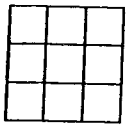
Name _____

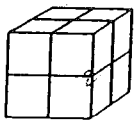
1.4 Exponents and Powers

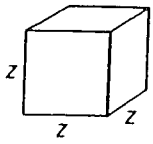
MATHPOWER™ *Nine*, pp. 16–18

Exponential Form	Repeated Multiplication	Standard Form
5^3	$5 \times 5 \times 5$	125
3^5	$3 \times 3 \times 3 \times 3 \times 3$	243

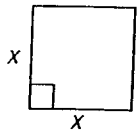
What power does each figure represent?

1.  _____

2.  _____

3. 

_____

4. 

_____

Complete the table.

	Power	Base	Exponent	Standard Form
5.	6^2			
6.		2	3	
7.				y^4
8.	a^5			

Fill in the blanks.

9. Word Form: *four cubed*
Repeated Multiplication: _____
Exponential Form: _____
Standard Form: _____

10. Word Form: _____
Repeated Multiplication: $6 \times 6 \times 6 \times 6$
Exponential Form: _____
Standard Form: _____

11. Word Form: _____
Repeated Multiplication: _____
Exponential Form: b^2
Standard Form: _____

12. Word Form: *fifth power of t*
Repeated Multiplication: _____
Exponential Form: _____
Standard Form: _____

13. Word Form: _____
Repeated Multiplication: _____
Exponential Form: _____
Standard Form: *0.008*

14. Word Form: *ten to the exponent fou*
Repeated Multiplication: _____
Exponential Form: _____
Standard Form: _____

Which is larger?

15. 2^5 or 5^2 _____ 16. 3^4 or 4^3 _____

17. 0.5^3 or 0.3^5 _____ 18. 1.8^2 or 8.1^2 _____

Evaluate.

19. $3^2 + 5^2$ _____ 20. $2^3 - 2^2$ _____

21. $5^3 \times 2^3$ _____ 22. $3^3 \times 2^2$ _____

23. Evaluate for $z = 3$.

a) z^4 _____ b) $6z^2 - 16$ _____

c) $3z^3 \times 2z^2$ _____ d) $3z^4 - 9$ _____

24. Evaluate for $a = 5$ and $b = 3$. Are the expressions equal? If not, circle the smaller expression.

a) $a^2 + b^3$ or $a^3 + b^2$ _____

b) a^2b^2 or $(ab)^2$ _____