

Name:

Period:

Date:

Rational Exponents and Radical Form Puzzle

A	9	F	$\frac{1}{32}$	K	625	P	$\frac{1}{16}$	U	-2
B	49	G	4	L	32	Q	$\frac{1}{49}$	V	$\frac{-1}{343}$
C	64	H	$-\frac{1}{8}$	M	16	R-5	5	W	$\frac{1}{7}$
D	27	I	$\frac{1}{9}$	N-2	$\frac{1}{729}$	S	216	X	$\frac{1}{125}$
E	-25	J	$\frac{1}{81}$	O	-8	T	-32	Y	$-\frac{1}{5}$

$2^2 = 4$	$2^7 = 128$	$3^4 = 81$	$5^4 = 625$	$7^2 = 49$
$2^3 = 8$	$2^8 = 256$	$3^5 = 243$	$5^5 = 3125$	$7^3 = 343$
$2^4 = 16$	$2^9 = 512$	$3^6 = 729$	$5^6 = 15625$	$7^4 = 2401$
$2^5 = 32$	$3^2 = 9$	$5^2 = 25$	$6^2 = 36$	$7^5 = 16807$
$2^6 = 64$	$3^3 = 27$	$5^3 = 125$	$6^3 = 216$	$7^6 = 117649$

There is a secret message encoded below. Solve each of the statements. Then match your answer with the correct letter to decode the message.

$\sqrt{-64^{-1/2}}$	$\sqrt[3]{125^2}$	$\sqrt{-625^{-1/4}}$	$\sqrt{-4^{5/2}}$	$\left(\frac{-1}{32}\right)^{3/5}$	$\frac{1}{\sqrt{-625^{-1}}}$	$\sqrt{25}$	$\sqrt{-3125^{2/5}}$	$1024^{1/5}$	$\sqrt{-32^{3/5}}$	$\frac{-1}{\sqrt{64^{-1}}}$	$\sqrt{729^{1/2}}$		
$64^{5/6}$	$\sqrt{-4^{3/2}}$	$-\left(\frac{1}{16}\right)^{-3/4}$	$\sqrt[3]{15625^2}$	$\sqrt{27^{-2/3}}$	$81^{-3/2}$	$\sqrt[4]{16^2}$	$81^{-1/2}$	$\frac{1}{\sqrt[5]{-32^3}}$	$-\left(\frac{1}{125}\right)^{-2/3}$	$\sqrt[3]{27^2}$	$\frac{1}{25^{-1/2}}$		
$\frac{-1}{\sqrt[5]{3125}}$	$\sqrt{-16^{3/4}}$	$\sqrt[5]{-32}$	$3125^{1/5}$	$\sqrt{-125^{2/3}}$	$256^{1/4}$	$\sqrt{-64^{1/2}}$	$\frac{-1}{\sqrt[5]{32^{-3}}}$	$81^{3/4}$	$\left(\frac{1}{\sqrt{3}}\right)^{-4}$	$\frac{-1}{4^{-5/2}}$			
$(729)^{1/3}$	$\frac{1}{64^{-5/6}}$	$128^{2/7}$	$\frac{-1}{625^{-1/2}}$	$\sqrt{2401}$	$\sqrt[4]{625}$	$\sqrt[6]{81^3}$	$16807^{-1/5}$	$\frac{1}{27^{2/3}}$	$\sqrt[5]{8^3}$	$\frac{1}{128^{-5/7}}$	$\frac{-1}{625^{1/4}}$	$-\sqrt{4^3}$	$\sqrt{-64^{1/6}}$
$\frac{1}{3125^{-1/5}}$	$\sqrt{-15625^{1/3}}$	$64^{-2/3}$	$16^{5/4}$	$(27)^{4/6}$	$\sqrt[4]{256^3}$	$\frac{1}{\sqrt[5]{3125^{-2}}}$	$\sqrt[3]{(-64)^2}$	$-\sqrt{25^{-1}}$	$25^{-3/2}$				
$\sqrt[3]{343^{-1}}$	$\frac{1}{81^{1/2}}$	$\sqrt{-16^{5/4}}$	$-\sqrt{64^{-1}}$	$-\sqrt[4]{16^3}$	$\frac{-1}{16^{-1/4}}$	$\sqrt{-8^{5/3}}$	$\sqrt[7]{2187^2}$	$36^{3/2}$	$\sqrt[4]{625^4}$	$\frac{1}{\sqrt{81}}$	$243^{-6/5}$	$512^{2/9}$	$\frac{?}{1}$

Name:

Period:

Date:

Rational Exponents and Radical Form Puzzle