Your grade: 100%

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Next item →

1/1 point

1/1 point

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- 1. Re write the number $784 = 2 \times 2 \times 2 \times 2 \times 7 \times 7$ using exponents.
 - (2⁴)(7²)
 - \bigcirc $(2 \times 7)^6$
 - \bigcirc (2⁶)(7⁶)
 - \bigcirc (16⁴)(49²)

For this type of problem, count the number of times each relevant factor appears in the product. That number is the exponent for that factor.

- 2. What is $(x^2-5)^0$?
 - $\bigcirc (x^2)$
 - 1
 - $\bigcirc (x^2) 5$
 - \bigcirc -4

Any real number (except zero) raised to the "zeroith" power =1.

- 3. Simplify $((x-5)^2)^{-3}$
 - $\bigcirc (x-5)^{-1}$
 - $\bigcirc (x-5)$
 - $(x-5)^{-5}$
 - $(x-5)^{-6}$

⊙ Correct By Rule 2, "Power to a Power," multiply the exponents and get:

$$(x-5)^{(2\times-3)} = (x-5)^{-6}$$

By the definition of negative exponents, this is equal to $\dfrac{1}{\left(x-5
ight)^6}$

- 4. Simplify $(\frac{8^2}{8^7})^2$
 - $O 8^{-5}$
 - $O 8^{-4}$
 - $\odot 8^{-10}$
 - \bigcirc 8^{-1}
 - **⊘** Correct

We can first simplify what is inside the parenthesis to 8^{-5} using the Division and Negative Powers

Then apply division and negative powers-- the result is the same. $\frac{8^4}{8^{14}}=8^{-10}$

- 5. $\log 35 = \log 7 + \log x$
 - Solve for x
 - O 4 O 7
 - 5
 - O 28
 - \odot correct $\log(x) = \log 35 \log 7$

$$\log(x) = \log \left(\frac{35}{7}\right)$$

By the Quotient Rule $\log x = \log 5$

6. $\log_2(x^2 + 5x + 7) = 0$

1/1 point

Solve for x

 $\bigcirc x = 3$

© $x=-2$ or $x=-3$ Convect We use the property that $p^{\log_2 n}=a$ Use both idea as exponent for 2 . $2^{\log_2 x^2+2a+7}=2^0$ $x^2+5x+7=1$ $x^2+5x+6=0$ $(x+3)(x+2)=0$ $x=-3$ OR $x=-2$ Simplify $\log_2 72 - \log_2 9$ $x=-3$ OR $x=-2$ Simplify $\log_2 72 - \log_2 9$ $x=-3$ $x=-2$ $x=-2$ Simplify $\log_2 8$ $x=-2$ $x=-2$ Simplify $\log_2 9 - \log_3 3 + \log_2 5$ $x=-2$ x
We use the property that $b^{\log_3 a} = a$ Use both sides as exponent for 2. $2^{\log_2 x^2 + 5x + 7} = 2^0$ $x^2 + 5x + 7 = 1$ $x^2 + 5x + 6 = 0$ $(x + 3)(x + 2) = 0$ $x = -3$ OR $x = -2$ Simplify $\log_2 72 - \log_2 9$ $\log_2 4$ $\log_2 4$ $\log_2 6$ 4 9 3 0 current by the quotient rule, this is $\log_3 \frac{72}{9} - \log_2 2^3 = 3$ $1/3 \text{ point}$ $\log_3 15$ 15 $\log_3 15$ 15 $\log_3 8$ 8 0 current By the Quotient and Product Rules, this is $\log_3 \frac{9 \times 5}{3} - \log_3 15$ $1/4 \text{ point}$ $15 \times \log_2 56$ $(8 \times \log_3 3) + (7 \times \log_2 5)$ $(5 \times \log_3 3) + (8 \times \log_2 5)$ $56 \times \log_3 15$ $0 \times \log_3 16$ $1/4 \text{ point}$ $1/4 point$
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$ \begin{array}{c} \bigcirc 4 \\ \bigcirc 3 \\ \hline \\ \bigcirc \text{ correct} \\ \textbf{ By the quotient rule, this is } \log_2 \frac{72}{9} = \log_2 2^3 = 3 \\ \hline \\ \text{Simplify} \log_3 9 - \log_3 3 + \log_3 5 \\ \hline \\ \bigcirc \log_3 15 \\ \hline \bigcirc 15 \\ \hline \bigcirc \log_3 8 \\ \hline \bigcirc 8 \\ \hline \\ \bigcirc \text{ correct} \\ \hline \\ \textbf{ By the Quotient and Product Rules, this is } \log_3 \frac{9 \times 5}{3} = \log_3 15 \\ \hline \\ \text{Simplify} \log_2 (3^8 \times 5^7) \\ \hline \bigcirc 15 \times \log_2 56 \\ \hline \bigcirc (8 \times \log_2 3) + (7 \times \log_2 5) \\ \hline \bigcirc (5 \times \log_2 3) + (8 \times \log_2 5) \\ \hline \bigcirc 56 \times \log_2 15 \\ \hline \\ \bigcirc \text{ correct } \\ \hline \\ \textbf{We first apply the Product Rule to convert to the sum: } \log_2 (3^8) + \log_2 (5^7). \text{ Then apply the power and root rule.} \\ \hline \\ \textbf{If } \log_{10} y = 100, \text{ what is } \log_2 y = ? \\ \hline \bigcirc 301.03 \\ \hline \bigcirc \text{ correct } \\ \hline \\ \textbf{Use the change of base formula, } \log_a b = \frac{\log_2 b}{\log_2 a} \\ \hline \\ \hline \text{Where the "old" base is x and the "new" base is a.} \\ \hline \end{array}$
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se $\frac{100}{\log_{10}(2)} = \frac{100}{0.30103} = 332.19$
$\log_{10}(2) = 0.30103 = 0.30103$
. A tree is growing taller at a continuous rate. In the past 12 years it has grown from 3 meters to 15 meters.
What is its rate of growth per year?
O 10.41%
() 11 41%
○ 11.41% ○ 12.41%
O 12.41%

 $\bigcirc \ x=2 \, {
m or} \ x=3$

1/1 point

- \odot $8.75\,\mathrm{days}$
- $\bigcirc~875\,\mathrm{days}$
- O 87.5 days
- $\bigcirc \ 0.875\,\mathrm{days}$

$$\odot$$
 correct $6.25 imes 10^{-10} imes e^{4t} = 10^6$

$$4t = \ln \, \big(\frac{10^6}{\left(6.25 \times 10^{-10}\right)} \big) = 35.00878$$

$$t = \ln \, \frac{10^6}{6.25 \times 10^{-10}} = 8.752195$$