Bellwork Alg 2 Monday, December 3, 2018

Simplify each. Assume all variables are positive.

1. $\sqrt[3]{12Q^5R^4} \cdot \sqrt[3]{14QR^6} \cdot \sqrt[3]{15Q^2R}$

2. $\dfrac{\sqrt[4]{2m^5n^{13}}}{\sqrt[4]{162m^{13}n^2}}$

3. If $a^2b = 12^2$, and b is an odd integer, then a could be divisible by all of the following EXCEPT:

A. 3 B. 4 C. 6 D. 9 E. 12

4.

x	0	2	4	5
$f(x)$	3	1	0	–2

The function $f(x)$ is defined by a polynomial. Some values of x and $f(x)$ are shown in the table. Which of the following must be a factor of $f(x)$?

A. $x-2$ B. $x-3$ C. $x-4$ D. $x-5$

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ANSWERS

Simplify each. Assume all variables are positive.

1. $\sqrt[3]{12Q^5R^4} \cdot \sqrt[3]{14QR^6} \cdot \sqrt[3]{15Q^2R}$

$= \sqrt[3]{2520\,Q^8R^{11}}$

$= \sqrt[3]{8 \cdot 315\,Q^8R^{11}}$

$= 2Q^2R^3\sqrt[3]{315\,Q^2R^2}$

2. $\dfrac{\sqrt[4]{2m^5n^{13}}}{\sqrt[4]{162m^{13}n^2}}$

$= \sqrt[4]{\dfrac{2m^5n^{13}}{162m^{13}n^2}}$

$= \sqrt[4]{\dfrac{n^4}{81m^8}}$

$= \dfrac{n^2\sqrt[4]{n^3}}{3m^2}$

3. If $a^2b = 12^2$, and b is an odd integer, then a could be divisible by all of the following EXCEPT:

A. 3 B. 4 C. 6 D. 9 E. 12

$a^2b = 12^2 = 12 \cdot 12 = 3 \cdot 4 \cdot 3 \cdot 4$

the only odd integers b could be are 1, 3, & 9

if $b=1$ $a^2 = 12^2 \rightarrow a = 12$

if $b=3$ $a^2 = 48 \rightarrow a = \sqrt{48}$

if $b=9$ $a^2 = 16 \rightarrow a = 4$

a could be divisible by all EXCEPT 9

4.

x	0	2	4	5
$f(x)$	3	1	0	−2

The function $f(x)$ is defined by a polynomial. Some values of x and $f(x)$ are shown in the table. Which of the following must be a factor of $f(x)$?

A. $x-2$ B. $x-3$ C. $x-4$ D. $x-5$

since $f(x)=0$ when $x=4$, $x=4$ must be a zero of $f(x)$.

if $x=4$ is a zero it came from the factor $x-4$