Bellwork Alg 2B Monday, September 18, 2017

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

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

$4 \cdot 3 \quad 2 \cdot 7 \quad 3 \cdot 5$

$8 \cdot 3^2 \cdot 7 \cdot 5$

$= \sqrt[3]{8 \cdot 315 Q^8 R^{11}} = \boxed{2Q^2R^3 \sqrt[3]{315Q^2R^2}}$

2. $\dfrac{\sqrt[4]{2m^5n^{13}}}{\sqrt[4]{162m^{13}n^2}} = \sqrt[4]{\dfrac{2m^5n^{13}}{162m^{13}n^2}} = \sqrt[4]{\dfrac{n^{11}}{81m^8}} = \boxed{\dfrac{n^2\sqrt[4]{n^3}}{3m^2}}$

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

$a^2b = 144$

$a^2 = 144 \rightarrow a = 12$

or

~~$a^2 = 48$~~ or

or

$a^2 = 16 \rightarrow a = 4$

144

$1 \cdot 144$

$2 \cdot 72$

$3 \cdot 48$

$4 \cdot 36$

$6 \cdot 24$

$8 \cdot 18$

$9 \cdot 16$

$12 \cdot 12$