Bellwork Alg 2B Thursday, October 12, 2017

1. Simplify. Assume all variables are positive. Rationalize denominators.

$$\frac{6a^2b\sqrt[5]{64a^3b^7}}{\sqrt[5]{54a^{11}b^{23}}}$$

2. Simplify. Use absolute value symbols where necessary.

$$\sqrt[6]{8x^6y^5}\cdot\sqrt[6]{10xy^9}\cdot\sqrt[6]{14x^{10}y^7}\cdot\sqrt[6]{18x^3y^8}$$

3. If exactly two of the three integers i,j and k are odd, which of the following expressions must be odd?

I. $(i+j)k$ *II.* $i+j+k$ *III.* $ij+k$

A. *III* only B. *I,II* and *III* C. *I* and *III* only D. *I* and *II* only E. *I* only

4. Which of the following could be remainders when 3 consecutive integers are each divided by 2?

A. 2,0,1 B. 0,1,2 C. 0,1,0 D. 0,0,1 E. 0,0,0

Answers

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1. Simplify. Assume all variables are positive. Rationalize denominators.

$$\frac{6a^2b\sqrt[5]{64a^3b^7}}{\sqrt[5]{54a^{11}b^{23}}} = \frac{6a^2b\sqrt[5]{32}}{\sqrt[5]{27a^8b^{16}}} = \frac{6a^2b\cdot 2}{\sqrt[5]{27a^8b^{16}}}$$

$$= \frac{12a^2b}{\sqrt[5]{3^3a^8b^{16}}}\cdot\frac{\sqrt[5]{3^2a^2b^4}}{\sqrt[5]{3^2a^2b^4}} = \frac{12a^2b\sqrt[5]{3^2a^2b^4}}{\sqrt[5]{3^5a^{10}b^{20}}} = \frac{12a^2b\sqrt[5]{3^2a^2b^4}}{3a^2b^4}$$

$$= \frac{4\sqrt[5]{3^2a^2b^4}}{b^3}$$

2. Simplify. Use absolute value symbols where necessary.

$$\sqrt[6]{8x^6y^5}\cdot\sqrt[6]{10xy^9}\cdot\sqrt[6]{14x^{10}y^7}\cdot\sqrt[6]{18x^3y^8}$$

2^3 $2\cdot5$ $2\cdot7$ $2\cdot9$

$$= \sqrt[6]{2^6\cdot 315x^{20}y^{29}}$$

$$= 2|x^3|y^4\sqrt[6]{315x^2y^5}$$

3. If exactly two of the three integers i, j and k are odd, which of the following expressions must be odd?

I. $(i+j)k$ *II.* $i+j+k$ *III.* $ij+k$

A. *III* only B. *I, II* and *III* C. *I* and *III* only D. *I* and *II* only E. *I* only

✗ I $(i+j)k$ if k is even this is even
if i or j is even this is odd

✗ II $i+j+k$ ODD + ODD + EVEN in any order is EVEN

✓ III $ij+k$ if i or j is even this is ODD
if k is even this is ODD

4. Which of the following could be remainders when 3 consecutive integers are each divided by 2?

A. 2,0,1 B. 0,1,2 C. 0,1,0 D. 0,0,1 E. 0,0,0

3 consecutive integers is either:

even ODD even or ODD even ODD

↓ ↓ ↓ ↓ ↓ ↓

when ÷ 2 remainder is 0 1 0 1 0 1