Northern Michigan University (Marquette Co, MI)

Time: 15 minutes

1. Simplify the following expression:

$$\frac{|\,3x - 15\,|}{|\,5 - x\,|}$$

$\dfrac{3\,|x-5|}{|5-x|}$ $\boxed{3}$

2. Simply the following expression:

$$\frac{x^{3/2}\,y^{-1/3}\,z^{2/4}}{x^{1/2}\,y^{2/3}\,z^{5/10}}$$

$\dfrac{x^{3/2-1/2}\; z^{1/2-1/2}}{y^{2/3+1/3}}$ $\dfrac{x^{1}\,z^{0}}{y^{1}}$ $\boxed{\dfrac{x}{y}}$

3. Simplify the following expression:

$$\sqrt[3]{a^3b^3 + 8a^3}$$

$\sqrt[3]{a^3\,(b^3 + 8)}$ $\sqrt[3]{a^3}\;\sqrt[3]{b^3 + 8}$

$\boxed{a\,\sqrt[3]{b^3 + 8}}$

4. Compute $64^{2/3}$. $(4^3)^{2/3}$ 4^2 $\boxed{16}$