Math-8H

math.mnrt.net **Semester 2 – Exam 2 – Practice** **Jan. 25, 2018**

_____, _____. _____ of **128** points. _____. _____.
Last name (please print) First name (please print) Points Percent Letter

For questions 1 to 5 simplify the expression. Answers may contain only positive exponents.

(6 pts) 1. $(-2a)^4$

Solution: $16a^4$

(26 pts) 2. $-2\,a^2 \cdot a^3 \cdot b^2$

Solution: $-2a^5b^2$

(26 pts) 3. $-\left(x^4\right)^2\left(-y^2\right)^5$

Solution: x^8y^{10}

(26 pts) 4. $\dfrac{-x^4y^2}{xy^{-3}}$

Solution: $-x^3y^5$

(13 pts) 5. x^{-3}

Solution: $\dfrac{1}{x^3}$

(6 pts) 6. Rewrite using exponents. $\left(\sqrt[7]{k}\right)^4$

Solution: $k^{\frac{4}{7}}$

(6 pts) 7. Rewrite without fractional exponent in the denominator. $\dfrac{a^4}{a^{\frac{2}{5}}}$

Solution:

$$\frac{a^4}{a^{\frac{2}{5}}} = a^4 \cdot a^{-2/5} \quad (1)$$

$$= a^{18/5} \quad (2)$$

(3)

For question 8 your answer should contain only positive exponents with no fractional exponents in the denominator.

(13 pts) 8. Simplify. $\dfrac{m^{\frac{1}{5}}}{m^{\frac{1}{5}} m^{\frac{3}{5}}}$

Solution:

$$\frac{m^{\frac{1}{5}}}{m^{\frac{1}{5}} m^{\frac{3}{5}}} = \frac{m^{\frac{1}{5}}}{m^{\frac{1}{5}} m^{\frac{3}{5}}} \cdot \frac{m^{\frac{1}{5}}}{m^{\frac{1}{5}}} \quad (4)$$

$$= \frac{m^{\frac{2}{5}}}{m} \quad (5)$$

For question 9, although you might choose to work with exponents, your answer may not contain any exponents. For example, you would answer $\sqrt{x}$ instead of $x^{1/2}$.

(3 pts) 9. Simplify. $\sqrt[7]{\sqrt{x^3}}$

Solution:

$$\sqrt[7]{\sqrt{x^3}} = \left(x^{1/3}\right)^{1/7} \tag{6}$$

$$= x^{1/21} \tag{7}$$

For question 10, you must answer with an integer and no exponents. For example, you would answer 100 instead of $2^2\,5^2$.

(3 pts) 10. Evaluate. $16^{\frac{3}{4}} \cdot 27^{\frac{2}{3}}$

Solution:

$$16^{\frac{3}{4}} \cdot 27^{\frac{2}{3}} = 8 \cdot 9 \tag{8}$$

$$= 72 \tag{9}$$