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MATH@TD

Name _____

Math 11U – U4: Exponent Rules Assignment Check **K ____/16** **A ____/6**

Please submit your answers/solutions to the following problems from the Mid-Unit Review. You should have all of these problems completed – please rewrite your solutions **neatly** in the spaces below.

Due: ***Thursday November 2 at the start of class***.

Multiple Choice (just your answers here) **K ____/4**

2. _____ 4. _____ 6. _____ 8. _____

Full Solution (write you best solution to the following problems – show your work)

#10 K ____/3, #13 K ____/3. #16 K ____/2. #14 K ____/4, #18 A ____/3, #22 A ____/3

10. Evaluate. Express your answer in rational form.

$$7^{-3} \div \left(\frac{7^2}{7^{-1}}\right)^{-2}$$

13. Simplify the expression. Express your answer with positive exponents.

$$\frac{\sqrt{81z^{16}}}{\sqrt{100z^{-4}}}$$

16. Evaluate the expression $\left(x^3\right)^n\left(y^{-n}\right)\left(x^y\right)$ for $x = -8, y = 2, n = -1$.

14. Simplify the expression. Express your answer with positive exponents.

$$\left(\frac{\left(x^{12}\right)^{0.25}\left(216x^{9}\right)}{(3x)^{6}\left(x^{18}\right)^{0.5}} \right)^{-\frac{1}{3}}$$

18. The surface area of a sphere is given by the formula: $SA_{(sphere)} = 4\pi r^2$. The surface area of a cylinder is given by the formula: $SA_{(cylinder)} = 2\pi rh + 2\pi r^2$. Determine the expression, in simplified form, that represents the ratio of surface area of a cylinder to a sphere. Use your formula to find the ratio of surface areas of a cylinder and sphere that both have radius 0.5 m and height 0.6 m.

22. Solve for x.

$$\sqrt[3]{\frac{1}{64}} + \left(\frac{243}{x}\right)^{\frac{2}{5}} = \sqrt{\frac{25}{4}}$$