

EXAM 1 - MTH 099 INTERSESSION 2011

MTH 099

13 May 2011

Instructor: Thomas Cuchta

Total Points: 100 (12 each + 4 free) Name: \_\_\_\_\_

**Read the following before starting the exam:**

- Show all work, clearly and in order, if you want full credit. I reserve the right to take off points if I cannot see how you arrived at your answer (even if your final answer is correct).
- Justify your answers as much as possible to ensure full credit.
- Partial credit will be awarded for incomplete answers.
- **Circle or otherwise indicate your final answers.**
- Please keep your answers brief; be clear and to the point.
- Good luck!

1.) Simplify

a.)  $\frac{y^8}{y^4}$

b.)  $\frac{z^2}{z^6}$

2.) Simplify

a.)  $\frac{w^3w^4}{w^3}$

b.)  $\frac{x^3x^8}{x^5}$

3.) Simplify

a.)  $(-3c^4d^2)(11c^6d)$

b.)  $\frac{-4c^{10}d^4}{2c^3d^2}$

4.) Simplify

a.)  $(w^2)^8$

b.)  $(x^3)^{10}$

5.) Simplify

a.)  $\left(\frac{-10}{7}\right)^0$

b.)  $6^{-2}$

6.) Simplify

a.)  $6^{-1} + \left(\frac{1}{3}\right)^{-2} + (14)^0$

b.)  $2^{-1} + 3^{-2} + 4^{-3}$

7.) Write the given number in scientific notation.

a.) 11,000,000

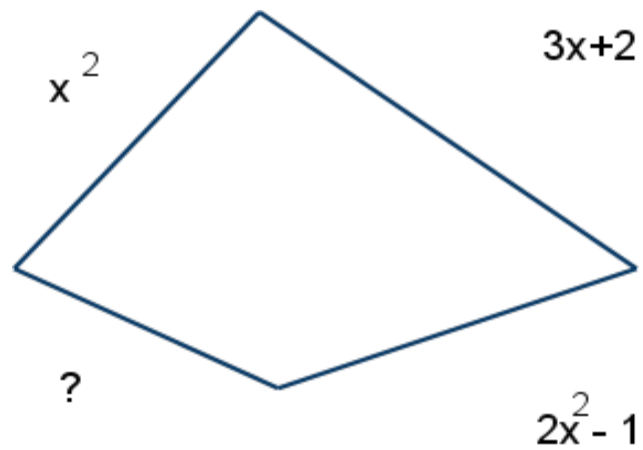
b.) 0.00000216

8.) Give a correct response.

a.) When using scientific notation, how do you determine whether to use a positive or negative power of 10?

b.) What is an advantage of using scientific notation?

9.) The perimeter of the polygon is  $x^3 + 5x^2 + 6x + 7$ . Find the polynomial that represents the length of the missing side.



9.) Expand using a special product formula or by using FOIL.

a.)  $(x+y)(x-y)$

b.)  $(a+b)^2$

10.) Expand using a special product formula or by using FOIL.

a.)  $(6p-1)(6p+1)$

b.)  $(3x+4)(3x+4)$

11.) Give a correct response.

a.) State a rule for dividing two quantities that have the same base.

b.) Explain the difference between  $4^{-2}$  and  $-4^2$