**Math 9 Chapter 3 Checkpoint (3.2, 3.3 & 3.4) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DAY \_\_\_ PERIOD \_\_\_\_**

**Exponent Laws:**

1) Write as a single power:



a)  b) 



c)  d) 



e) (3a2)3 =  f)  =



g)  = h)  =



2) Explain the difference between .



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**Order of Operations:**

3) Solve using BEDMAS:

a)  b)  c) 



4) Sue, Bruce and Ryan got different answers when they evaluated this expression:



Sue’s answer was 11, Bruce’s answer was -39, and Ryan’s answer was -7.

1. Who had the correct answer? Show your work.



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**Solving Problems Involving Exponents:**

\_\_\_\_\_ 5)If a colony of 1000 bacteria doubles in size every 2 h, what is the size of the colony after 6 h?



|  |  |  |  |
| --- | --- | --- | --- |
| a. | 2000 | c. | 8000 |
| b. | 6000 | d. | 64 000 |



\_\_\_\_\_ 6) Determine which expression represents the volume of the cube.



a. 2 × 52 c. 56



b. 52 × 52  d. 5 × 5 × 5



7) Two cubes have edge lengths of 4 cm and 6 cm, respectively.

a) Determine an expression that represents the surface area of each of the cubes.



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b) Calculate the difference in the surface areas of the cubes.



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| --- | --- | --- | --- | --- | --- | --- |
| **Concept** | **Question #s** | **B** | **D** | **A** | **E** | **Area for improvement** |
| Exponent Laws  - demonstrate an  understanding of operations on powers with integral bases  (excluding base 0) and whole number exponents | 1 – 2 |  |  |  |  |  |
| Order of Operations  - explain and apply the order of operations, including exponents, with and without technology | 3 – 4 |  |  |  |  |  |
| Solving Problem  - solve problems  involving powers | 5 – 7 |  |  |  |  |  |

MATH 9: Chapter 3.2, 3.3 & 3.4 Part I Checkpoint

|  |  |  |  |
| --- | --- | --- | --- |
| **Beginning** | **Developing** | **Accomplished** | **Exemplary** |
| Does not demonstrate a basic understanding of concept. Substantial errors throughout. | Basic understanding of concepts. Errors and inconsistency reveal some missing understanding of the concepts. | Solid understanding of concepts. Most answers are correct with only a few errors. | Complete and in depth understanding of concepts. |

