**Tin Ka Ping Secondary School**

**Form 2 – Mathematics**

**Laws of indices – Lesson Worksheet**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class:\_\_\_\_\_\_\_ ( ) Date:\_\_\_\_\_\_\_­­­­\_\_\_\_\_\_\_\_\_

**A. Pre-lesson**

Review of Laws of indices

Warm-up Exercise - Simplify the following expressions **by using laws of indices**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | =  = \_\_\_\_\_\_\_\_\_\_\_\_\_ | 2. | =  = \_\_\_\_\_\_\_\_\_\_\_\_\_  Complete the following questions. Observe and compare (a) and (b) in each question.  (Question 1 is done for you as an example)   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1. (a) |  |  | (b) |  | = 1 |  | | | | | = 1 | | | | | | | | | | | 2. (a) |  |  | (b) |  |  |  | | | | | = \_\_\_\_\_\_ | | | | | | | | | | | 3. (a) |  |  | (b) |  | | |  |  | | = \_\_\_\_\_\_ | | | | | | | | | | 4. (a) |  |  | (b) |  | | |  | | | = \_\_\_\_\_\_ | | | | | | | | |   In general, | 3. | =  = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Activity 1 – Concept of zero index (What does mean?)

1

1

For \_\_\_\_\_\_

Activity 2 – Concept of negative index (What does mean?)

Complete the following questions. Observe and compare (a) and (b) in each question.

(Question 1 is done for you as an example)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. (a) |  |  | (b) |  |
|  | | | | |
| 2. (a) |  |  | (b) |  |
|  | | | | |
| 3. (a) |  | | (b) |  |
|  | | | | |
| 4. (a) |  | | (b) |  |
|  | | | | |

In general,

1

1

For

**Pop-Quiz 1**

1. Circle the correct answers.

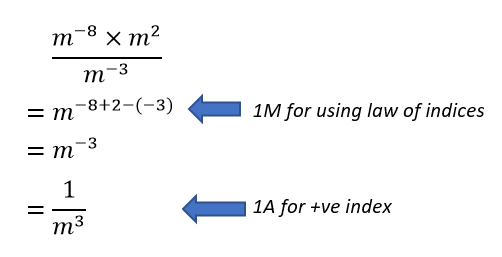
(a) (b)

(c) (d)

**B. Exercise**

**Example**

Simplify the following expression and express your answer in **positive** **indices**. (@ 2 marks)

****

1. Simplify the following questions **by using laws of indices (step)** and express your answers in

**positive** **indices (answer)**.

|  |  |  |  |
| --- | --- | --- | --- |
| (a) |  | (b) |  |

**Pop-Quiz 2**

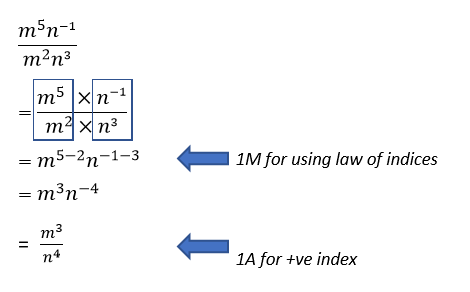
Simplify the following expression(s) **by using laws of indices (step)** and express your answer(s) in

**positive** **indices (answer).**

**C. Mixed-type questions**

**Example**

Simplify the following expression and express your answer in **positive** **indices**. (@ 2 marks)



Simplify the following expressions **by using laws of indices (step)** and express your answers in

**positive indices (answer)**.

|  |  |  |  |
| --- | --- | --- | --- |
| Gp1. |  | Gp2. |  |
| Gp3. |  | Gp4. |  |

|  |  |
| --- | --- |
| Gp5. |  |