

|                   |             |
|-------------------|-------------|
| 1. Nickname ..... | Number..... |
| 2. Nickname ..... | Number..... |

### Assignment 3.2 Multiplying Power

Prime number from 1 - 20 .....

**Example 1:** Write the power in base 2

|       |                                                                       |
|-------|-----------------------------------------------------------------------|
| 1. 8  | $= 2 \times \underline{\hspace{2cm}}$<br>$= 2^{\boxed{\hspace{1cm}}}$ |
| 2. 32 | $= \underline{\hspace{2cm}}$<br>$= 2^{\boxed{\hspace{1cm}}}$          |

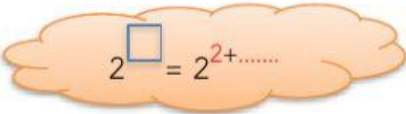
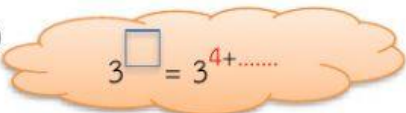
**Example 2:** Write the power in base 3

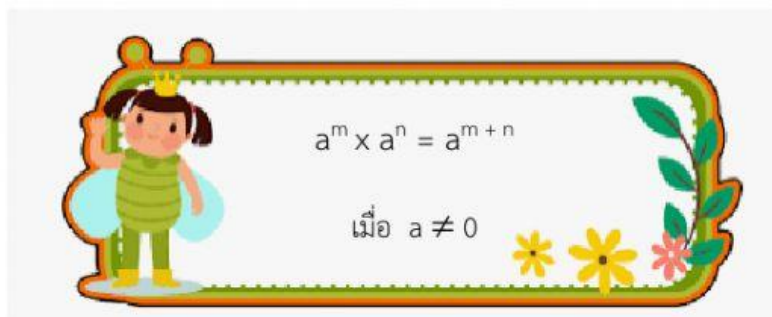
|       |                                                                       |
|-------|-----------------------------------------------------------------------|
| 1. 27 | $= 3 \times \underline{\hspace{2cm}}$<br>$= 3^{\boxed{\hspace{1cm}}}$ |
| 2. 81 | $= \underline{\hspace{2cm}}$<br>$= 3^{\boxed{\hspace{1cm}}}$          |

**Example 3:** Write the power in base 5

|        |                                                                       |
|--------|-----------------------------------------------------------------------|
| 1. 125 | $= 5 \times \underline{\hspace{2cm}}$<br>$= 5^{\boxed{\hspace{1cm}}}$ |
| 2. 625 | $= \underline{\hspace{2cm}}$<br>$= 5^{\boxed{\hspace{1cm}}}$          |

**Example 4:** Simplify the following power write in the single term.

|                                 |                                                                                                                                                                                                                                            |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. $2^2 \times 2^5$             | $= (2 \times 2) \times (2 \times 2 \times 2 \times 2 \times 2)$<br>$= (2 \times 2 \times 2 \times 2 \times 2 \times 2)$<br>$= 2^{\boxed{\phantom{00}}}$  |
| 2. $3^4 \times 27$              | $= (3 \times 3 \times 3 \times 3) \times (\underline{\hspace{2cm}})$<br>$= (\underline{\hspace{2cm}})$<br>$= 3^{\boxed{\phantom{00}}}$                   |
| 3. $125 \times 5^4$             | $= (\underline{\hspace{2cm}}) \times (\underline{\hspace{2cm}})$<br>$= (\underline{\hspace{2cm}})$<br>$= 5^{\boxed{\phantom{00}}}$                                                                                                         |
| 4. $(2^3 a^5) \times (2^6 a^2)$ | $= (2^3 \times 2^5) \times (a^5 \times a^2)$<br>$= 2^{3+5} \times a^{\boxed{\phantom{00}}}$<br>$= 2^{\boxed{\phantom{00}}} \times a^{\boxed{\phantom{00}}}$                                                                                |



### Exercise

1. Simplify the following power using multiplying power law.

|                                               |                                                                                                                                                                                                                |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) $2^5 \times 2^7$                           | $= 2^{5+7}$<br>$= 2^{\boxed{\phantom{00}}}$                                                                                                                                                                    |
| 2) $(-2)^9 \times (-2)^{11}$                  | $= (-2)^{\boxed{\phantom{00}}}$<br>$= (-2)^{\boxed{\phantom{00}}}$                                                                                                                                             |
| 3) $5^4 \times 5^7 \times 5^9$                | $= 5^{\boxed{\phantom{00}}}$<br>$= 5^{\boxed{\phantom{00}}}$                                                                                                                                                   |
| 4) $3^5 \times 3^{11} \times 3^6 \times 3^2$  | $= 3^{\boxed{\phantom{00}}}$<br>$= 3^{\boxed{\phantom{00}}}$                                                                                                                                                   |
| 5) $(2^3 \times 3^2) \times (2^8 \times 3^4)$ | $= (2^3 \times 2^8) \times (3^2 \times 3^4)$<br>$= 2^{\boxed{\phantom{00}}} \times 3^{\boxed{\phantom{00}}}$<br>$= 2^{\boxed{\phantom{00}}} \times 3^{\boxed{\phantom{00}}}$                                   |
| 6) $(7^3 b^5) \times (7^4 \times b^2)$        | $= (7^3 \times \boxed{\phantom{00}}) \times (b^5 \times \boxed{\phantom{00}})$<br>$= 7^{\boxed{\phantom{00}}} \times b^{\boxed{\phantom{00}}}$<br>$= 7^{\boxed{\phantom{00}}} \times b^{\boxed{\phantom{00}}}$ |

2. Simplify the following power write in the single term.

|                          |                                                                   |                                                              |                                                       |
|--------------------------|-------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------|
| 1) $16 \times 2^5$       | $= 2^{\boxed{\phantom{00}}} \times 2^5$                           | $= 2^{\boxed{\phantom{00}}}$                                 | $= 2^{\boxed{\phantom{00}}}$                          |
| 2) $3^5 \times 81$       | $= 3^5 \times 3^{\boxed{\phantom{00}}}$                           | $= 3^{\boxed{\phantom{00}}}$                                 | $= 3^{\boxed{\phantom{00}}}$                          |
| 3) $8a^3 \times 2^6 a^7$ | $= (2^{\boxed{\phantom{00}}} \times 2^6) \times (a^3 \times a^7)$ | $= 2^{\boxed{\phantom{00}}} \times a^{\boxed{\phantom{00}}}$ | $= 2^{\boxed{\phantom{00}}} a^{\boxed{\phantom{00}}}$ |