

Name: \_\_\_\_\_

Class/Set: \_\_\_\_\_

# Laws of Indices

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1: Simplify the following, leaving your answer in index form:

a)  $6^3 \times 6^2 =$  \_\_\_\_\_

b)  $5^5 \times 5^7 =$  \_\_\_\_\_

c)  $2^7 \times 2^9 =$  \_\_\_\_\_

d)  $7^4 \times 7^6 =$  \_\_\_\_\_

e)  $9^9 \times 9 =$  \_\_\_\_\_

f)  $8^2 \times 8^4 =$  \_\_\_\_\_

2: Simplify the following, leaving your answer in index form:

a)  $4^{14} \div 4^{10} =$  \_\_\_\_\_

b)  $10^{12} \div 10^3 =$  \_\_\_\_\_

c)  $3^{14} \div 3^4 =$  \_\_\_\_\_

d)  $9^{14} \div 9^9 =$  \_\_\_\_\_

e)  $2^{12} \div 2^{10} =$  \_\_\_\_\_

f)  $8^{15} \div 8^8 =$  \_\_\_\_\_

3: Simplify the following, leaving your answer in index form:

a)  $(5^7)^7 =$  \_\_\_\_\_

b)  $(6^2)^5 =$  \_\_\_\_\_

c)  $(4^2)^6 =$  \_\_\_\_\_

d)  $(3)^6 =$  \_\_\_\_\_

e)  $(10^6)^4 =$  \_\_\_\_\_

f)  $(7^7)^{10} =$  \_\_\_\_\_

4: Simplify the following, leaving your answer in index form:

a)  $9^{13} \div 9^3 =$  \_\_\_\_\_

b)  $(2^9)^5 =$  \_\_\_\_\_

c)  $8^4 \times 8 =$  \_\_\_\_\_

d)  $(6^5)^4 =$  \_\_\_\_\_

e)  $3^{10} \div 3^8 =$  \_\_\_\_\_

f)  $4^{10} \times 4^2 =$  \_\_\_\_\_

# Answers: Laws of Indices

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1: a)  $6^5$       b)  $5^{12}$       c)  $2^{16}$       d)  $7^{10}$       e)  $9^{10}$       f)  $8^6$

2: a)  $4^4$       b)  $10^9$       c)  $3^{10}$       d)  $9^5$       e)  $2^2$       f)  $8^7$

3: a)  $5^{49}$       b)  $6^{10}$       c)  $4^{12}$       d)  $3^6$       e)  $10^{24}$       f)  $7^{70}$

4: a)  $9^{10}$       b)  $2^{45}$       c)  $8^5$       d)  $6^{20}$       e)  $3^2$       f)  $4^{12}$