## Worksheet 3.1 and 3.2

1. Identify the base and the exponent in each repeated multiplication. Then, write the following expression as a power (ex: 8<sup>3</sup>) and evaluate. (1 mark each)

(1 mark each)	Base	Exponent	Power	Evaluate
a) 4 × 4 × 4				
b) $9 \times 9 \times 9 \times 9 \times 9$				
C) $(-2) \times (-2) \times (-2) \times (-2)$				
d) $-2 \times 2 \times 2 \times 2$				
<b>e)</b> $(-5) \times (-5) \times (-5) \times (-5) \times (-5)$				
$f) -5 \times 5 \times 5 \times 5 \times 5$				
g) $d \times d \times d \times d \times d \times d$				

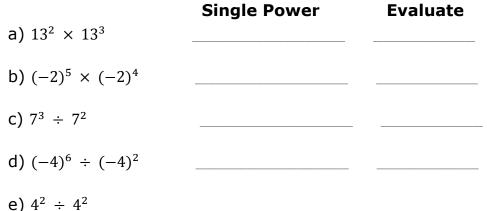
2. Write each power as repeated multiplication. Then, evaluate. (1 mark each)

	Repeated Multiplication	Evaluate
a) 7 <sup>3</sup>		
b) $(-3)^5$		
c) $-3^5$		
d) $(-10)^6$		
e) $-10^6$		
f) $(5m)^8$		
g) $(15cm)^3$		

3. Write each expression as repeated multiplication, a single power, then evaluate. (1 mark each)

evaluate. (1 mark each)	Repeated	Single	Evaluate
a) $3^2 \times 3^4$	Multiplication	Power	
b) $(-2)^3 \times (-2)^2$			
c) $10^3 \div 10^2$			
d) 12 <sup>3</sup> × 12			
e) $(-4)^8 \div (-4)^6$			
f) 5 <sup>4</sup> ÷ 5 <sup>4</sup>			
g) $7^3 \div 7^5$			
h) 5 <sup>3</sup> ÷ 5 <sup>6</sup>			

4. Use the "rules" for multiplying or dividing powers that have the same base to make the questions below into a single power. Then, evaluate.



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C) $(-2) \times (-2) \times (-2) \times (-2)$				
d) $-2 \times 2 \times 2 \times 2$				
<b>e)</b> $(-5) \times (-5) \times (-5) \times (-5) \times (-5)$				
$f) -5 \times 5 \times 5 \times 5 \times 5$				
g) $d \times d \times d \times d \times d \times d$				

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e) $(-4)^8 \div (-4)^6$			
f) $5^4 \div 5^4$			
g) $7^3 \div 7^3$			
h) $(-5)^3 \div (-5)^3$			

4. Use the "rules" for multiplying or dividing powers that have the same base to make the questions below into a single power. Then, evaluate.

	Siligle Powel	Evaluate
a) $13^2 \times 13^3$		
b) $(-2)^5 \times (-2)^4$		
c) $7^3 \div 7^2$		
d) $(-4)^6 \div (-4)^2$		
e) $4^2 \div 4^2$		