## January Exam Review Unit 2

Answers are on Slides 32 - 35

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1. Write the base of  $-(-6)^3$ .
a. 6
b. -6c.  $-6 \times 3$ d. 3

- 2. Evaluate: 6<sup>5</sup> a. 30
- (b) 7776 c. 15 625 d. 11

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- 3. Evaluate: -4<sup>4</sup> -256
- b. -16 c. 16 d. 256

$$-4^4 = -256$$

4. Evaluate: (-5)<sup>7</sup>
a. -35

b. 35 c. 78 125

d. -78 125

$$(-5)^3 = -78125$$

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_			
5	W/hich	ancurer 10	negative?
J.	VV IIICII	allow CI is	negative:

- i) (-7)<sup>8</sup> +
- ii) -(7)<sup>8</sup> -
- iii) -(-7)<sup>8</sup> -
- a. į and ii b. į and iii



6. Which power is positive?

- i) (6)<sup>5</sup> +
- ii) (-6)<sup>5</sup> -
- iii) -(6)<sup>5</sup> -
- (iv)  $-(-6)^5$  + (a.) i and iv
- b. iii and iv c. į, ii, and iv d. į and ii

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c. 0

d. 8

$$\begin{array}{ccc} -8^{\circ} & & \\ \hline & & \\ \hline & & \\ \hline \end{array} \begin{array}{cccc} -1 & & \\ \hline & & \\ \hline \end{array}$$

- 8. Evaluate: (-13)0 a. 0
- c. -13 d. -1

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- 9. Evaluate: (-10<sup>3</sup>)<sup>0</sup>
  - (a.) 1
- b. -1 c. -30 d. 30

 $(-10^3)^{\circ}$ 

10. Evaluate:  $6^5 - 3^3$ a. 6561

b. 9

(c.) 7749 d. 21

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11. Evaluate: 
$$(5^3 - 4^2)^0 - (6^2 - 8^0)$$
  
a) -34 b. -35

$$(5^3-4^2)^{\circ} - (6^2-8^{\circ})$$

$$- (36-1)$$

$$- (35)$$

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12. Evaluate: 
$$(3+4)^2 - (2-4)^3$$

$$(3+4)^{2} - (2-4)^{3}$$
  
 $(7)^{2} - (-2)^{3}$   
 $(49 - (-8))$ 

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13. Which expression has a value of 0?

i) 
$$-(-5)^0 + 2 \times (-3)^0 - (-2)^0$$

ii) 
$$(5 \times 3)^0 - (3-2)^2 + (4-3)^0$$

iii) 
$$3-(2+2)^2-(-4)^0$$

iv) 
$$(4 \times 2 + 4) - (3^2 - 5^2)^0 - (-5)^0$$
  
a. i, ii, and iv b. ii and iii

c. i, iii, and iv

d.) i and iv

i) 
$$-(-5)^{0} + 2 \times (-3)^{0} - (-2)^{0}$$
  
 $-(1) + 2 \times 1 - (1)$   
 $-1 + 2 - 1$   
 $= 0$ 

iii) 
$$3-(2+2)^2-(-4)^0$$

ii)  $(5 \times 3)^0 - (3-2)^2 + (4-3)^0$ 

iv)  $(4 \times 2 \div 4) - (3^2 - 5^2)^0 - (-5)^0$ 

= 0

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- 14. Write the product of  $5^3 \times 5^4$  as a single power. b.  $5^{12}$

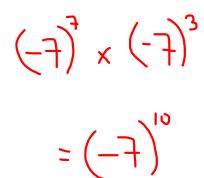
- d. 257

$$5^{3} \times 5^{4} = 5^{7}$$

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- 15. Write the product of  $(-7)^7 \times (-7)^3$  as a single power.

  (a)  $(-7)^{10}$  b.  $(-14)^{10}$  c. 49
- c. 49<sup>10</sup>
- d. (-7)<sup>21</sup>



16. Write the quotient of  $\frac{6^{10}}{6^5}$  as a single power.

(a)  $6^5$ (b)  $6^{15}$ (c)  $6^2$ (d) 2

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17. Write the quotient of  $(-8)^{15} \div (-8)^{5}$  as a single power. a. 3 b.  $(-8)^{20}$  c.  $(-8)^{3}$ 

d. (-8) 10

18. Express 
$$\frac{(-5)^9 \times (-5)^6}{(-5)^3}$$
 as a single power.  
a.  $(-5)^5$  b.  $(-5)^{51}$  c.  $(-5)^{12}$  d.  $(-5)^{18}$ 

$$\frac{(-5)^9 \times (-5)^6}{(-5)^3} = \frac{(-5)^{15}}{(-5)^3} = (-5)^{12}$$

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19. Evaluate: 
$$(-7)^6 + (-7)^6$$
a. 0

b. -7

c.) 1

d. -1

$$(-7)^6 \div (-7)^6 = (-7)^6$$

$$-1$$

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20. Evaluate: 
$$\frac{(5)^8 \times (5)^6}{(5)^{12}}$$

a. 10

b. 4

c. 2

d. 25

$$\frac{(5)^{8} \times (5)^{6}}{(5)^{12}} = \frac{5^{12}}{5^{12}} = 5^{2}$$

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21. Evaluate: 
$$(-2)^5 \times (-2)^3 \div (-2)^0$$
  
a.  $-128$  b.  $-256$ 

(c.) 256

d. -32 768

$$(-2)^5 \times (-2)^3 \div (-2)^8$$
  
 $(-2)^8 \div (-2)^9$   
 $= (-2)^8$   
 $= 256$ 

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- 22. Which expressions have positive values?
  - i)  $[(-5)^2]^7 = (-5)^{14} = +$
  - ii)  $\left[ -(-5)^2 \right]^7 = -(-5)^{14} = (-)(4) = -$
  - iii)  $-(5^2)^7 = -5^{14} = (-)(+) = -$
  - <u>iv</u>)  $-[-(-5)^2]^7 = -- (-5)^{14} = (+) (+) = +$
- b. ii and iii c. į and ii
- (d) i and iv

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23. Which expressions have negative values?

i) 
$$\left[-(-3)^5\right]^5 = -(-3)^{25} = -(-) = +$$

ii) 
$$(-3^5)^5 = -3^{25} = (-)$$

iii) 
$$[(-3)^5]^5 = (-3)^{35} = (-1)^{35}$$

- a. ii and iii
- b. į and ii 🐧 į and iv d. iii and iv

- 24. Which answers are positive?
  - i) (5)<sup>3</sup> +
  - ii) (-7)<sup>6</sup> +
  - iii) (-3)<sup>7</sup> -
  - iv)  $-(6)^3$  -



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25. Evaluate: 
$$\frac{5^{3} \times (2+4)^{2} \times 6(-9)^{0}}{-(4)^{0} \times 6^{3} \times (7-2)^{2}}$$
Top
$$5^{3} \times (2+4)^{2} \times 6(-9)^{0}$$
Bottom
$$-(4)^{0} \times 6^{3} \times (7-2)^{2}$$

$$-(4)^{0} \times (6^{3} \times (7-2)^{2}$$

$$-(4)^{0} \times (6^{$$

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26. Simplify, then evaluate.

$$\frac{(-2)^{6} \times (-2)^{2}}{(-2)^{3} \times (-2)^{0}} = \frac{(-2)^{8}}{(-2)^{3}} = (-2)^{5}$$

$$= (-2)^{5}$$

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27. Simplify, then evaluate.

$$\frac{(2^4)^3 \times (2^2)^4}{(2^4 \times 2^4)^2} = \frac{2^{12} \times 2^8}{(2^8)^2} = \frac{2^{20}}{2^{16}}$$

$$=2^4$$

28. Simplify, then evaluate.

Shippiny, their evaluate.
$$(4^{6} + 4^{3})^{2} - (2^{8} + 2^{6})^{2}$$

$$(4^{3})^{2} - (2^{2})^{2}$$

$$(4^{3})^{2} - (2^{2})^{2}$$

$$(4^{3})^{2} - (2^{2})^{2}$$

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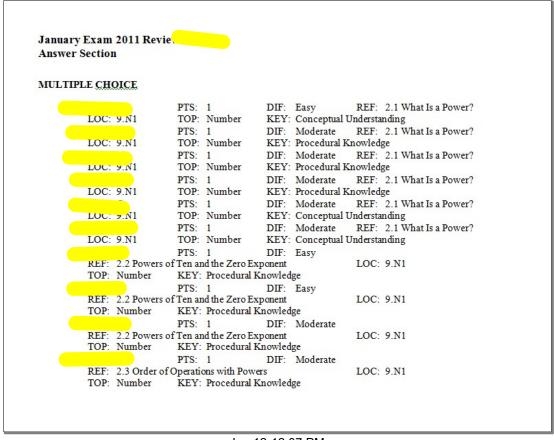
29. Simplify, then evaluate.

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30. Evaluate: 
$$\frac{(15)^2 - (6)^2}{(9)^2 - 2(3)^2} = \frac{225 - 36}{81 - 2(9)} = \frac{189}{81 - 18}$$
Show your calculations
$$= \frac{189}{63}$$

$$= \frac{3}{2}$$

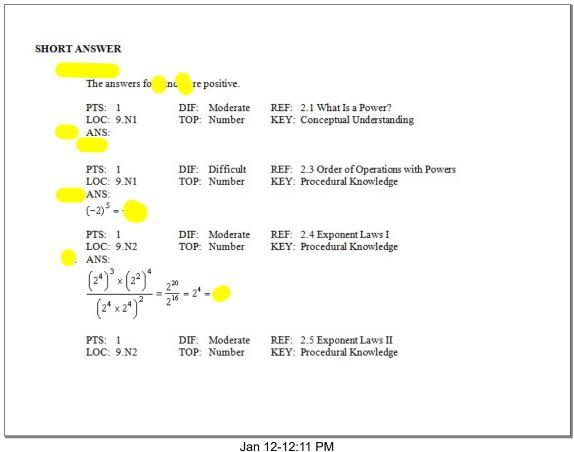
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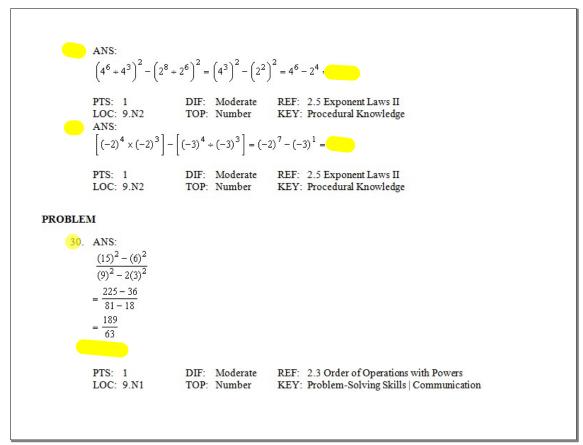


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PTS: 1
                                   DIF: Moderate
REF: 2.3 Order of Operations with Powers
                                                    LOC: 9.N1
                 KEY: Procedural Knowledge
TOP: Number
                 PTS: 1
                                  DIF: Moderate
REF: 2.3 Order of Operations with Powers
                                                    LOC: 9.N1
TOP Number
                 KEY: Procedural Knowledge
                                  DIF: Difficult
                 PTS: 1
REF: 2.3 Order of Operations with Powers
                                                    LOC: 9.N1
                 KEY: Procedural Knowledge
TOP: Number
                 PTS: 1
                                   DIF: Easy
                                                    REF: 2.4 Exponent Laws I
LOC: 9.N2
                 TOP: Number
                                   KEY: Procedural Knowledge
                                  DIF: Easy
                 PTS: 1
                                                    REF: 2.4 Exponent Laws I
LOC: 9.N2
                 TOP: Number
                                   KEY: Procedural Knowledge
                                                    REF: 2.4 Exponent Laws I
                 PTS:
                                   DIF: Easy
                 TOP: Number
LOC: 9 N2
                                   KEY: Procedural Knowledge
                                                    REF: 2.4 Exponent Laws I
                 PTS: 1
                                   DIF: Easy
LOC: 9.N2
                 TOP: Number
                                   KEY: Procedural Knowledge
                 PTS: 1
                                                    REF: 2.4 Exponent Laws I
                                  DIF: Moderate
                                  KEY: Procedural Knowledge
LOC: 9.N2
                 TOP: Number
                 PTS: 1
                                  DIF: Moderate
                                                    REF: 2.4 Exponent Laws I
LOC: 9.N2
                 TOP: Number
                                  KEY: Procedural Knowledge
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LOC: 9.N2
                 TOP: Number
                                  KEY: Procedural Knowledge
                                                   REF: 2.4 Exponent Laws I
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                                  DIF: Moderate
LOC: 9.N2
                                  KEY: Procedural Knowledge
                 TOP: Number
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                                  DIF: Moderate
                                                    REF: 2.5 Exponent Laws II
LOC: 9.N2
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                                  KEY: Conceptual Understanding
                                                    REF: 2.5 Exponent Laws II
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LOC: 9.N2
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