Name: _____ _____ Class: _____ Date: _____ ID: A

Exposants 9R

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Evaluate: -4^4
a. -256 b. -16 c. 16 d. 256

____ 2. Which answer is negative?
i) $(-6)^6$
ii) $-(6)^6$
iii) $-(-6)^6$
a. i and ii b. ii and iii c. i only d. i and iii

____ 3. Which number is the greatest?
i) $(5\times10^3)+(6\times10^2)+(4\times10^1)+(7\times10^0)$
ii) 5645
iii) $(5\times10^3)+(7\times10^2)+(8\times10^0)$
iv) 5780
a. iv b. i c. iii d. ii

____ 4. Evaluate: $(5^3-4^2)^0-(6^2-8^0)$
a. -34 b. -35 c. -36 d. 73

____ 5. Which is the correct value of $3^2+4\times6-4$?
i) 26
ii) 17
iii) 29
iv) 74
a. i b. iii c. iv d. ii

____ 6. Which expression has a value closest to 2?
i) $(-2)\times(-3)-(-3)^2-(3\times2)^0$
ii) $(-5\times3)+4^2-(-2)^0$
iii) $(-2)^0-(-2)^1-(-2)^2$
iv) $(-3)^2+(-3)-(-2)^2+(-2)^0$
a. iii b. iv c. i d. ii

____ 7. Which expression has a value of 0?
i) $-(-7)^0+2\times(-5)^0-(-4)^0$
ii) $(7\times5)^0-(5-4)^2+(8-5)^0$
iii) $5-(4\div4)^2-(-8)^0$
iv) $(4\times4\div8)-(5^2-7^2)^0-(-7)^0$
a. ii and iii b. i, iii, and iv c. i, ii, and iv d. i and iv

____ 8. Express $\dfrac{(-5)^9\times(-5)^6}{(-5)^3}$ as a single power.
a. $(-5)^5$ b. $(-5)^{51}$ c. $(-5)^{12}$ d. $(-5)^{18}$

____ 9. Evaluate: $\dfrac{(5)^8\times(5)^6}{(5)^{12}}$
a. 10 b. 4 c. 2 d. 25

____ 10. Evaluate: $10^2\times10^5+10^5$
a. 10 100 000
b. 1 000 000 000 000
c. 120
d. 10 000 100 000

____ 11. Write $\left[(-4)\times(-5)\right]^3$ as a product of powers.
a. $3(-4)+3(-5)$
b. $(-4)^3\times(-5)^3$
c. $(-4)^3+(-5)^3$
d. $4^3\times5^3$

____ 12. Write $\left(\dfrac{11}{9}\right)^5$ as a quotient of powers.
a. 2^5 b. 11^5-9^5 c. $\dfrac{11^5}{9^5}$ d. $\dfrac{11^5}{9^1}$

____ 13. Which expressions have positive values?
i) $\left[(-5)^2\right]^7$
ii) $\left[-(-5)^2\right]^7$
iii) $-\left(5^2\right)^7$
iv) $-\left[-(-5)^2\right]^7$
a. ii and iv b. ii and iii c. i and ii d. i and iv

____ 14. Which expressions have negative values?
i) $\left[-(-4)^3\right]^3$
ii) $\left(-4^3\right)^3$
iii) $\left[(-4)^3\right]^3$
iv) $-\left[(-4)^3\right]^3$
a. ii and iii b. i and iv c. i and ii d. iii and iv

Short Answer

15. Complete this table.

Power	Base	Exponent	Repeated Multiplication
5^3			
3^4			
	7	3	
			$6\times6\times6\times6\times6$

16. Write 805 076 using powers of 10.

17. Write $(2\times10^4)+(5\times10^2)$ in standard form.

18. Which number, $(4\times10^6)+(4\times10^5)+(4\times10^1)$ or 4 400 400, is greater?

19. Evaluate: $6^2-[12\div(-2)]^3$

20. Evaluate: $70\times2^2+80\times3^2\times0.75$

21. Identify, then correct, any errors in the work below.

$(5+3)^2\times4+5$
$=8^2\times9$
$=64\times9$
$=576$

22. Insert brackets to make each statement true.
    a) $3^2+4\times5-2^2=13$
    b) $3^2+4\times5-2^2=61$

23. Evaluate.
    a) $3^2\times4^2-5\times2^4$
    b) $4^2\times(3^2-5)$
    c) $(3\times4)^2-5\times4^2$
    What do you notice about the answers?

24. Evaluate: $\dfrac{5^3\times(2+4)^2\times6(-9)^0}{-(4)^0\times6^3\times(7-2)^2}$

25. Evaluate each expression. Which expression has a value closer to 0?
    a) $6(3^2-2^2)-4(-2^2)^0-3^3$
    b) $(-2)^4-2(-3)^2+[5-(-4)^0]$

26. Write the quotient of $\dfrac{(-7)^9}{(-7)^5}$ as a single power.

27. Simplify, then evaluate.
$\dfrac{(-2)^6\times(-2)^2}{(-2)^3\times(-2)^0}$

28. Simplify, then evaluate.
$\dfrac{\left(2^4\right)^3\times\left(2^2\right)^4}{\left(2^4\times2^4\right)^2}$

29. Simplify, then evaluate.
$\left[(-2)^4\times(-2)^3\right]-\left[(-3)^4\div(-3)^3\right]$

30. Express $\left[\left(7^2\right)^4\right]^3$ as a single power of 7.

31. Is the value of $\dfrac{\left[(-14)^9\right]^7}{\left[-(14)^4\right]^3}$ positive or negative? Explain.

Problem

32. Evaluate: $(7)^5+(-5)^4-(6)^2$
    Show your steps.

33. Evaluate: $5(5)^4-3(-3)^3$
    Show your steps.

Name: _____ ID: A

34. Where possible, replace ☐ with a "+" or "–" sign to make each product positive.
    a) $-(\square 9)^{11}$
    b) $\square(-9)^{12}$
    c) $-(\square 9)^{12}$
    d) $\square(-9)^{11}$
    Can all products be made positive? Explain.

35. A square has area 250 000 cm². Write the side length as a power of 10. Determine the side length in metres.

36. Evaluate: $\dfrac{(15)^2-(6)^2}{(9)^2-2(3)^2}$
    Show your calculations.

37. Determine the missing exponents that make this equation true.
    $(3^2+2)-(7-3)=120$
    Justify your answer.

38. Insert one set of brackets to make $3^3+4\times5^2-6^0$:
    a) the least possible value.
    b) the greatest possible value.

39. Identify, then correct, any errors in the work shown.
    $\dfrac{5^2+3\times4^2-3^2}{3^2-(5\times4^0)}$
    $=\dfrac{25+3\times16-9}{9-1}$
    $=\dfrac{28\times7}{\cdot8}$
    $=\dfrac{196}{8}$
    $=24.5$

40. Simplify, then evaluate. Show your work.
    $\dfrac{7^2\times2^3\times7^1\times2^2\times7^3\times2^1\times7^0}{7^2\times2^0\times7^2\times2^2\times2^1}$

41. These are two samples of student work. Are they correct? Explain.
    Student A: $\left(3^3\times3^4\right)^2=\left(3^{12}\right)^2=3^{14}$
    Student B: $\left(3^3\times3^4\right)^2=\left(3^7\right)^2=3^{14}$

Réponses

1a 2 b 3a 4a 5b 6b 7d 8c 9d

10 a 11 b 12 c 13 d 14 a 16. $8\times10^5+5\times10^3+7\times10^1+6\times10$

17. 20500 18. 4 400 400 est plus grand 19. 252 20. 820

21. PEDMAS 22. a) 13 b) 61 23) a=b=c=64 24) -5

25) a) -1 b) 2 26. $(-7)^4$ 27. -32 28. 16 29. -125

30. 7^{24} 31. positive 32. 17396 33. 3206 34. -; +;

toujours négatif ; - 35. 5m 36. 3 37. ex: gauche $(3^2+2)^2-(7-3)^1$

38. a) 1 b) 2208 39. PEDMAS, exp. 0 pour 4 seulement.

40. 392 41. methode de A est incorrecte.

PTO →

exposants

May-21-12
1:39 AM

1) TROUVE LA VALEUR DE x :

a) $7^{3x} \div 7^{2x} \times 7^{3} = 7^{15}$

b) $12^{4x} \times 12^{5} \div 12^{10} = 12^{27}$

c) $(5^{x})^{8} \div 5^{x+1} = 5^{13}$

d) $27^{7x} \div 81^{9} \div 9^{13} = 3$

2) SIMPLIFIE LES EXPRESSIONS SUIVANTES (EXPOSANT UNIQUE)

a) $121^{3} \div 11^{5} =$

b) $64^{10} \times 4^{5} \div 16 =$

c) $2^{32} \div 1024^{2} \times 16^{7} =$

d) $625^{18} \times 125^{13} \div 5 =$

3) EVALUE LES EXPRESSIONS :

a) $3^{4}(12^{2} - 5^{4})^{0} - 2(4^{2} - 3^{3}) =$

b) $\dfrac{-3(2-4)^{3} - 2(3+8)^{2}}{(-2)^{4} - 3(2-7)^{0}} =$

c) $\dfrac{3^{7}}{27^{2}} - \dfrac{32^{6}}{512^{3}} =$

d) $\dfrac{625^{6}}{25^{11}} - \dfrac{64^{10}}{(-4)^{29}}$

e) $\dfrac{(21-11)^{15}(4-7)^{23}(2+8)^{30}}{(9-3)^{31}(5-15)^{14}(8-5)^{21}} =$

f) $\dfrac{-10(9-5)^{2} - (-3)[72 \div (18-6)^{2}]}{2(18-21)^{0} - (37-33)^{2}} =$

Réponses : [1] a) 6 b) 8 c) 2 d) 3

[2] a) 11 b) 4^{33} c) 2^{40} d) 5^{170}

[3] a) 103 b) -2 c) -5 d) 29 e) -15

f) 4