# Spring2020 8th Grade Math #1

# Subject: Mathematics

# State: Ohio

Student Name:_____

Teacher Name:_____

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1 Which number is equivalent to $5^{-1}$?

(A) -5

(B) $-\frac{1}{5}$

(C) $\frac{1}{5}$

(D) 5

2 What is the value of $2^0 + 2^{-1} + 2^{-2}$?

(A) -6

(B) $2^{-3}$

(C) $1\frac{3}{4}$

(D) 7

3 Simplify:

$5^2 \times 5^{-2}$

(A) 0

(B) 1

(C) 5

(D) 25

4 Which of the following is equivalent to the expression below? $(2^5)(2^6)$

(A) $2^{11}$

(B) $2^{30}$

(C) $4^{11}$

(D) $4^{30}$

5 What is the value of the expression below?

$(-2)^3(-2)^2$

(A) $-64$

(B) $-32$

(C) 32

(D) 64

6 Which of the following is equivalent to the expression below?

$x^6 \cdot x^2$

(A) $x^3$

(B) $x^4$

(C) $x^8$

(D) $x^{12}$

7 Which is equivalent to the expression below?

$7^4 \div 7^9$

(A) -35

(B) $\frac{1}{7^5}$

(C) $7^5$

(D) $7^{13}$

8 Which expressions are equivalent to $\frac{3^{-8}}{3^{-4}}$ ? Select **all** that apply.

(A) $3^{-12}$

(B) $3^{-4}$

(C) $3^{2}$

(D) $\frac{1}{3^{2}}$

(E) $\frac{1}{3^{4}}$

(F) $\frac{1}{3^{12}}$

9 If $y \neq 0$, which of the following is equivalent to the expression below?

$$\frac{15y^9}{5y^3}$$

(A) $3y^3$

(B) $3y^6$

(C) $10y^3$

(D) $10y^6$

10 What is the value of the expression below?

$$\frac{2^6}{2^2}$$

(A) 8

(B) 16

(C) 256

(D) 4096

11 Which expressions are equivalent to $\frac{1}{2^6}$?

Select **all** that apply.

(A) $2^{-5} \cdot 2^{-1}$

(B) $2^{-3} \cdot 2^{2}$

(C) $2^{-2} \cdot 2^{-4}$

(D) $2^{1} \cdot 2^{5}$

(E) $2^{1} \cdot 2^{6}$

(F) $2^{2} \cdot 2^{-8}$

(G) $2^{3} \cdot 2^{3}$

12 Which expression is equivalent to $\frac{2^{-3}}{2^{-5}}$?

(A) $2^2$

(B) $\frac{1}{2^2}$

(C) $2^8$

(D) $\frac{1}{2^8}$

13 Which expressions are equivalent to $7^8 \times 7^{-4}$?

(A) $7^{(8-4)}$

(B) $(7^8)^{-4}$

(C) $\dfrac{7^8}{7^4}$

(D) $\dfrac{7^8}{7^{-4}}$

(E) $7^2$

(F) $7^{-2}$

(G) $7^{-32}$

14 Which expression is equivalent to $(7^3)^5 \cdot 7^4$ ?

Select **each** correct answer.

(A) $7^{3 \cdot 5 \cdot 4}$

(B) $7^{3 \cdot 5 + 4}$

(C) $7^{3 + 5 + 4}$

(D) $7^{3(5 + 4)}$

(E) $7^{3 \cdot 5} \cdot 7^4$

(F) $7^{3 + 5} \cdot 7^4$

15 What is the value of $n$ for the equation $5^n = 5^{11} \cdot 5^3$?

Write your answer below.

16 What value of $x$ makes the equation below true?

$9^5 \cdot 9^7 = 9^x$

17 Which expression is equivalent to $5^3$?

Select **each** correct expression.

(A) $5^7 \cdot 5^{-4}$

(B) $\frac{5^{12}}{5^4}$

(C) $5 + 5^2$

(D) $5^0 \cdot 5^3$

(E) $5^3 - 5^0$