

EXPRESSIONS STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

I CAN WRITE AND EVALUATE NUMERICAL EXPRESSIONS INVOLVING WHOLE NUMBER EXPONENTS. 6.EE.1

1. 5^3	2. 15^1	3. 3^4
4. $\left(\frac{1}{2}\right)^2$	5. 14^2	6. 0.2^3
7. Write each expression in expanded form. a. 18^1 _____ b. 9^3 _____ c. 6^7 _____ d. 7^6 _____	8. Write each expression in standard form. a. $8 \cdot 8 \cdot 8 \cdot 8$ _____ b. $3 \cdot 3 \cdot 3 \cdot 3$ _____ c. $5 \cdot 5 \cdot 5 + 3 \cdot 3$ _____ d. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ _____	

I CAN WRITE EXPRESSIONS IN WHICH LETTERS STAND FOR NUMBERS. 6.EE.2A

9. The product of a number and eighteen	10. The price decreased by nine dollars
11. Twelve dollars times the number of hours	12. The sum of c squared and fourteen
13. Two times a number decreased by eleven	14. Five times a number, divided by four

I CAN IDENTIFY PARTS OF AN EXPRESSION USING MATHEMATICAL TERMS. 6.EE.2B

15. Label each of the parts of the expression below.

$$4X - 5^3 + 2X + 7Y$$

I CAN EVALUATE EXPRESSIONS IF J=3, K=6, AND M=12.**6.EE.2**

16.

$$2j^2 - 9$$

17.

$$8(m - k) + 5$$

18.

$$\frac{jk + 4m}{2}$$

19.

$$4(m^2 - k) - 18$$

20. The volume of a rectangular prism with a length of 3.5 m, a width of 8 m, and a height of 6 m

21. The area of a triangle with a base of 12 cm and a height of 9.6 cm

I CAN CREATE EQUIVALENT EXPRESSIONS.**6.EE.2B**

22. Four students write algebraic expressions on their whiteboards. Which of the students wrote equivalent expressions?

Student 1

$$A - B + C$$

Student 2

$$(A + B) + C$$

Student 3

$$A + (B + C)$$

Student 4

$$A + (B - C)$$

i CAN APPLY PROPERTIES OF OPERATIONS.**6.EE.3**

23. On a quiz show, the contestant who gets the answer correct in the shortest amount of time wins. The host asks for the solution to $49+83+51$. Contestant number one quickly found the sum of 49 and 51 to be 100, then added 83 to get 183. Which property did the contestant use?

24. Jamie was really struggling to multiply two digit numbers together. Mrs. Brack helped her with the problem $13 \cdot (20 \cdot 5)$ by multiplying 20 by 5 and then by 13, which is 1300. What property did Mrs. Brack use?

25. Complete the table below.

PROPERTY	PROBLEM	USE THE PROPERTY
Commutative Property of Addition	$7.5 + s$	
Additive Identity Property	$k + 0$	
Multiplicative Identity Property	$b \cdot 1$	
Commutative Property of Multiplication	$c \cdot d$	
Zero Product Property	$v \cdot 0$	

i CAN PERFORM ARITHMETIC OPERATIONS.**6.EE.2C**

26.

$$\frac{(18 - 6) + 4 \cdot 4}{7}$$

27.

$$(12^2 - 20) - 18$$

28.

$$15^2 - (3 \cdot 5) + 7$$

29. Which operation is performed in the second step of the problem below?

$$7 \cdot 6 - (18 + 3^2)$$

30. Which operation is performed in the second step of the problem below?

$$\frac{7^2 - 9}{8}$$

I CAN IDENTIFY WHEN TWO EXPRESSIONS ARE EQUIVALENT.**6.EE.4**

31. $8(4x + 9)$	32. $3(5x + 2)$	33. $2(8x + 10)$
34. $15 - (x \cdot 9)$	35. $16 \cdot 11 \cdot 8$	36. $(17 + 18) + 11$

I CAN USE VARIABLES TO REPRESENT NUMBERS AND WRITE EXPRESSIONS WHEN SOLVING REAL-WORLD PROBLEMS.**6.EE.6**

<p>37. It costs \$50 to join a gym, plus \$28 per month.</p> <p>Define a variable: _____</p> <p>Cost of n number of months: _____</p> <p>Cost of 7 months: _____</p>	<p>38. The temperature today was 10 degrees colder than twice yesterday's.</p> <p>Define a variable: _____</p> <p>Today's temperature: _____</p> <p>Yesterday's temperature: _____</p>
<p>39. Dessie can type twice as many words per minute as Jasmine.</p> <p>Define a variable: _____</p> <p>Jasmine: _____</p> <p>Dessie: _____</p>	<p>40. Audrey has \$206 in her savings account and plans to add \$14 per week.</p> <p>Define a variable: _____</p> <p>Amount in savings after w weeks: _____</p> <p>Amount in savings after 8 weeks: _____</p>

I'VE GOT IT!

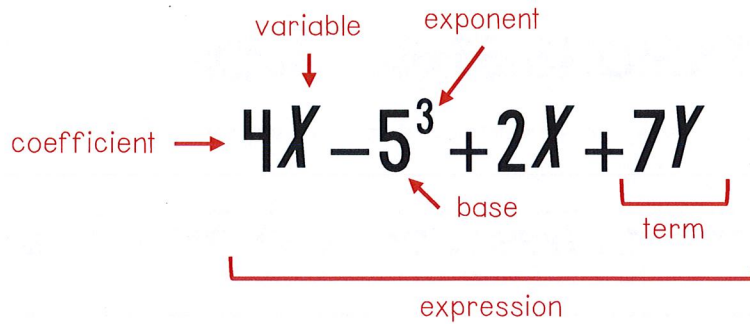
What concepts can I ace on the test?

HELP!

What concepts do I need to study?

I CAN IDENTIFY PARTS OF AN EXPRESSION USING MATHEMATICAL TERMS.

15. Label each of the parts of the expression below.



I CAN EVALUATE EXPRESSIONS IF J=3, K=6, AND M=12.

16.

$$2j^2 - 9$$

9

17.

$$8(m - k) + 5$$

53

18.

$$\frac{jk + 4m}{2}$$

33

19.

$$4(m^2 - k) - 18$$

534

20. The volume of a rectangular prism with a length of 3.5 m, a width of 8 m, and a height of 6 m

168 m³

21. The area of a triangle with a base of 12 cm and a height of 9.6 cm

57.6 cm²

I CAN CREATE EQUIVALENT EXPRESSIONS.

22. Four students write algebraic expressions on their whiteboards. Which of the students wrote equivalent expressions?

Student 1

$$A - B + C$$

Student 2

$$(A + B) + C$$

Student 3

$$A + (B + C)$$

Student 4

$$A + (B - C)$$

Students 2 and 3

i CAN APPLY PROPERTIES OF OPERATIONS.

6.EE.3

23. On a quiz show, the contestant who gets the answer correct in the shortest amount of time wins. The host asks for the solution to $49+83+51$. Contestant number one quickly found the sum of 49 and 51 to be 100, then added 83 to get 183. Which property did the contestant use?

commutative property of addition

24. Jamie was really struggling to multiply two digit numbers together. Mrs. Brack helped her with the problem $13 \cdot (20 \cdot 5)$ by multiplying 20 by 5 and then by 13, which is 1300. What property did Mrs. Brack use?

associative property of multiplication

25. Complete the table below.

PROPERTY	PROBLEM	USE THE PROPERTY
Commutative Property of Addition	$7.5 + s$	$s + 7.5$
Additive Identity Property	$k + 0$	k
Multiplicative Identity Property	$b \cdot 1$	b
Commutative Property of Multiplication	$c \cdot d$	$d \cdot c$
Zero Product Property	$v \cdot 0$	0

i CAN PERFORM ARITHMETIC OPERATIONS.

6.EE.2C

26.

$$\frac{(18 - 6) + 4 \cdot 4}{7}$$

4

27.

$$(12^2 - 20) - 18$$

106

28.

$$15^2 - (3 \cdot 5) + 7$$

217

29. Which operation is performed in the second step of the problem below?

$$7 \cdot 6 - (18 + 3^2)$$

addition

30. Which operation is performed in the second step of the problem below?

$$\frac{7^2 - 9}{8}$$

subtraction

I CAN IDENTIFY WHEN TWO EXPRESSIONS ARE EQUIVALENT.

Use properties of operations to create an equivalent expression.

31. $8(4x + 9)$ $32x + 72$	32. $3(5x + 2)$ $15x + 6$	33. $2(8x + 10)$ $16x + 20$
34. $15 - (x \cdot 9)$ $15 - (9 \cdot x)$	35. $16 \cdot 11 \cdot 8$ $16 \cdot 8 \cdot 11$	36. $(17 + 8) + 11$ $17 + (8 + 11)$

I CAN USE VARIABLES TO REPRESENT NUMBERS AND WRITE EXPRESSIONS WHEN SOLVING REAL-WORLD PROBLEMS.

37. It costs \$50 to join a gym, plus \$28 per month. Define a variable: <u> $n = \# \text{ of months}$ </u> Cost of n number of months: <u> $50 + 28n$ </u> Cost of 7 months: <u> $\\$246$ </u>	38. The temperature today was 10 degrees colder than twice yesterday's. Define a variable: <u> $y = \text{temperature yesterday}$ </u> Today's temperature: <u> $2y - 10$ </u> Yesterday's temperature: <u> y </u>
39. Dessie can type twice as many words per minute as Jasmine. Define a variable: <u> $j = \# \text{ of words Jasmine types}$ </u> Jasmine: <u> j </u> Dessie: <u> $2j$ </u>	40. Audrey has \$206 in her savings account and plans to add \$14 per week. Define a variable: <u> $w = \# \text{ of weeks}$ </u> Amount in savings after w weeks: <u> $206 + 14w$ </u> Amount in savings after 8 weeks: <u> $\\$318$ </u>

I'VE GOT IT!

What concepts can I ace on the test?

HELP!

What concepts do I need to study?