SmartMathz

Writing Numerical Expressions

Grade 5 Algebra Worksheet

Date:_____ Name:_____

LET'S MAKE LEARNING FUN

1. Write the numerical expressions.

a. The sum of 21 and 4, doubled.	b. 5 times the sum of 7 and 23.
c. Triple the sum of 45 and 55.	d. The sum of 3 fifteens and 4 twos.
f. The difference between 9 thirty-sevens and 8 thirty-sevens.	e. 2 times the difference between $49.5 - 37.5$.

2. Write the numerical expressions in words, then, solve.

Expression	**Words**	**Solution**
a. $10 \times (3.5 + 12.5)$		
b. $(88 - 78) \times 11$.		
c. $(51 + 49) \times 26$		
c. $(51 + 49) \times 26$		

3. Without calculating, compare the two expressions using $<$, $>$, or $=$.

a.	60 twenty-fives minus 1 twenty-five		61×25
b.	$93 \times (40 + 2)$		$(40 + 2) \times 39$

4. Jason claims that $(11 + 14) \times (8 + 13)$ and $(11 \times 14) + (8 \times 13)$ are equivalent because they have the same digits and same operations.

a. Is Jason correct? Explain your thinking.

b. Which expression is greater. How much greater?

Writing Numerical Expressions

Grade 5 Algebra Answer Sheet

1. Write the numerical expressions.

a. The sum of 21 and 4, doubled. $(21 + 4) \times 2$	b. 5 times the sum of 7 and 23. $5 \times (7 + 23)$
c. Triple the sum of 45 and 55. $3 \times (45 + 55)$	d. The sum of 3 fifteens and 4 twos. $3 \times 15 + 4 \times 2$
f. The difference between 9 thirty-sevens and 8 thirty-sevens. $9 \times 37 - 8 \times 37$	e. 2 times the difference between 49.5 ans 37.5. $2 \times (49.5 - 37.5)$

2. Write the numerical expressions in words, then, solve.

Expression	**Words**	**Solution**
a. $10 \times (3.5 + 12.5)$	10 times the sum of 3.5 and 12.5.	**160**
b. $(88 - 78) \times 11$.	The difference between 88 and 78, then multiplied by 11.	**110**
c. $(51 + 49) \times 26$	The sum of 51 and 49, then multiplied by twenty-six	**2,600**
c. $(60 \times 2) + (15 \times 2)$	The sum of 60 twos and 15 twos	**150**

3. Without calculating, compare the two expressions using $<$, $>$, or $=$.

a.	60 twenty-fives minus 1 twenty-five	$<$	61×25
b.	$93 \times (40 + 2)$	$>$	$(40 + 2) \times 39$

4. Jason claims that $(11 + 14) \times (8 + 13)$ and $(11 \times 14) + (8 \times 13)$ are equivalent because they have the same digits and same operations.

a. Is Jason correct? Explain your thinking.

No.

The explanation will vary.

b. Which expression is greater. How much greater?

$(11 + 14) \times (8 + 13)$ **is greater.**

267 **greater**

Workings

First Expression: $(11 + 14) \times (8 + 13) = 25 \times 21 = 525$

Second Expression: $(11 \times 14) + (8 \times 13) = 154 + 104 = 258$

Difference: $(525 - 258) = 267$ **greater**

1. Mark the expression(s) that give the same product as $6 \times \frac{3}{8}$. Explain how you did it.

(a.)	$\boxed{\frac{3}{8} \times 6}$	(b.)	$6 \times \frac{8}{3}$	(c.)	$(8 \div 6) \times 3$
(d.)	$\boxed{(6 \times 3) \div 8}$	(e.)	$3 \div 8 \times 6$	(f.)	$8 \div (3 \times 6)$

The explanations will vary.

2. Write an expression to match, and then evaluate.

(a.) $\frac{1}{8}$ the sum of 23 and 17.

Answer

$$\frac{1}{8} \times (23 + 17) = \frac{1}{8} \times (40) = \frac{1 \times 40}{8} = \frac{40}{8} = \mathbf{5}$$

(b.) Subtract 4 from $\frac{1}{6}$ of 42.

Answer

$$\left(\frac{1}{6} \text{ of } 42\right) - 4 = \left(\frac{1}{\cancel{6}_{1}} \times \cancel{42}^{7}\right) - 4 = (1 \times 7) - 4 = 7 - 4 = \mathbf{3}$$

(c.) 7 times as much as the sum of $\frac{1}{3}$ and $\frac{4}{5}$.

Answer

$$7 \times \left(\frac{1}{3} + \frac{4}{5}\right) = 7 \times \left(\frac{5 + 12}{15}\right) = 7 \times \left(\frac{17}{15}\right) = \frac{119}{15} = \mathbf{7\frac{14}{15}}$$

(d.) $\frac{2}{3}$ of the product of $\frac{3}{8}$ and 16.

Answer

$$\frac{2}{3} \times \left(\frac{3}{8} \times \frac{16}{1}\right) = \frac{2}{3} \times \left(\frac{\cancel{3}^{1}}{\cancel{8}} \times \frac{\cancel{16}^{2}}{1}\right) = \frac{2}{3} \times \left(\frac{3 \times 2}{1 \times 1}\right)$$

$$= \frac{2}{3} \times \frac{6}{1} = \frac{2}{\cancel{3}^{1}} \times \frac{\cancel{6}^{2}}{1} = \frac{2 \times 2}{1 \times 1} = \frac{4}{1} = \mathbf{4}$$

(e.) 7 copies of the sum of 8 fifths and 4.

Answer

$$7 \times \left(\frac{8}{5} + \frac{4}{1}\right) = 7 \times \left(\frac{8 + 20}{5}\right) = 7 \times \left(\frac{28}{5}\right) = \frac{7 \times 28}{5} = \frac{96}{5} = \mathbf{19\frac{1}{5}}$$

(f.) 15 times as much as 1 fifth of 12.

Answer

$$15 \times \left(\frac{1}{5} \text{ of } 12\right) = 15 \times \left(\frac{1}{5} \times 12\right) = \frac{15}{1} \times \frac{12}{5}$$

$$= \frac{\cancel{15}^{3}}{1} \times \frac{12}{\cancel{5}^{1}} = \frac{3 \times 12}{1 \times 1} = \frac{36}{1} = \mathbf{36}$$

3. Use $<$, $>$, or $=$ to make true number sentences without calculating. Explain your thought process.

a. $\frac{2}{3} \times (9 + 12)$ $\boxed{>}$ $15 \times \frac{2}{3}$

b. $\left(3 \times \frac{5}{4}\right) \times \frac{3}{5}$ $\boxed{>}$ $\left(3 \times \frac{5}{4}\right) \times \frac{3}{8}$

c. $6 \times \left(2 + \frac{32}{16}\right)$ $\boxed{>}$ $(6 \times 2) + \frac{32}{16}$

The explanations will vary.