

Extended-Response Chapter 6

Demonstrate your knowledge by giving a clear, concise solution to each problem. Be sure to include all relevant drawings and justify your answers. You may show your solution in more than one way or investigate beyond the requirements of the problem. If necessary, record your answer on another piece of paper.

1. Write the order of operations in your own words.

2. Every winter, students at Camden Middle School go on a class ski trip. Fifteen students always sign up first. For every inch of snow that falls, an additional 25 students sign up.
 - a. Write an expression to show the total number of students going on the trip, using only a variable to represent the additional students.

 - b. Now write a different expression to show the total number of students going on the trip, using an expression consisting of a variable and a number to represent the additional students.

 - c. Are the expressions equivalent? Explain.

3. Evaluate $7p + 6(p \div q)^2 - 2q$ if $p = 6$ and $q = 3$. Show your work and give an explanation for each step.

4. Use the properties you learned to show why $(a + b) + c$ is equivalent to $b + (a + c)$.

Write each product using an exponent.

1. $9 \times 9 \times 9 \times 9$

1. _____

2. $17 \times 17 \times 17$

2. _____

3. $4 \times 4 \times 4 \times 4 \times 4$

3. _____

4. 6×6

4. _____

Write each power as a product of the same factor. Then find the value.

5. 5^3

5. _____

6. 4^6

6. _____

7. 7^4

7. _____

8. 11^2

8. _____

Find the value of each expression.

9. $3 + 12 - 9$

10. $(7 + 4) \times 3 - 2$

9. _____

11. $2^4 - 6 \div 2$

12. $5 + 4 \times (2 + 7)$

10. _____

11. _____

Evaluate each expression if $m = 3$ and $n = 7$.

13. $n + 9$

14. $4m - 5$

12. _____

13. _____

15. $n^2 - 2m$

16. $3mn$

14. _____

15. _____

16. _____

Write each phrase as an algebraic expression.

17. four times a number

18. a number divided by 14

17. _____

18. _____