1.1 Practice WITH CalcChat® AND CalcView®

Review & Refresh

Find the missing value(s) in the ratio table. Then write the equivalent ratios.

1.

Oranges	5		15
Apples	4	8	

2.

Cars	3	9	
Trucks	2		36

Evaluate the expression.

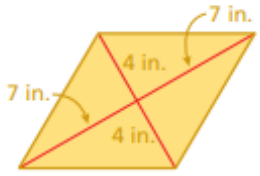
3. $3(15 - 8) + 4$

4. $2 \times 20 - 13$

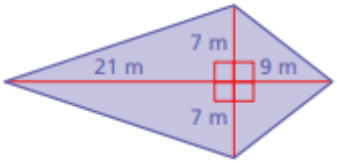
5. $-7 + (6 - 2) \div 2$

Find the area of each figure.

6.



7.



Concepts, Skills, & Problem Solving

USING EXPONENT NOTATION **Write the power in repeated multiplication form. Then find the value of the power.** (See Exploration 1.)

8. 4^4

9. 8^2

10. 5^3

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WRITING EXPRESSIONS USING EXPONENTS **Write the product using exponents.** (See Example 1.)

11. $3 \cdot 3 \cdot 3 \cdot 3$

12. $6 \cdot 6$

13. $9 \cdot 9 \cdot 9 \cdot 9$

14. $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$

15. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

16. $5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$

17. $7 \cdot 7 \cdot 7 \cdot 2 \cdot 2$

18. $8 \cdot 8 \cdot 8 \cdot 8 \cdot 6 \cdot 6 \cdot 6$

19. $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 9 \cdot 9$

EVALUATING EXPRESSIONS **Evaluate the expression.** (See Example 2.)

20. 5^2

21. -11^3

22. 1^6

23. 3^4

24. 13^3

25. -9^4

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26. **YOU BE THE TEACHER** Your friend evaluates the power -6^2. Is your friend correct? Explain your reasoning.

$-6^2 = (-6) \cdot (-6) = 36$

1.2 Practice WITH CalcChat® AND CalcView®

Review & Refresh

Write the product using exponents.

1. $11 \cdot 11 \cdot 11 \cdot 11 \cdot 11$

2. $6 \cdot 6 \cdot 6 \cdot 3 \cdot 3$

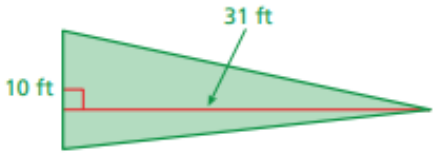
Evaluate the expression when $x = 2$ and $z = -3$.

3. $-4x$

4. xz

5. $7z + 6x$

6. Find the area of the triangle.



Concepts, Skills, & Problem Solving

FINDING PRODUCTS OF POWERS Write the expression in repeated multiplication form. Then write the expression as a power. (See Exploration 1.)

7. $5^6 \cdot 5^3$

8. $(6^4)^2$

9. $8^3 \cdot 8^4$

FINDING POWERS **Simplify the expression. Write your answer as a power.** (See Examples 1 and 2.)

10. $3^2 \cdot 3^2$

▶ 11. $8^{10} \cdot 8^4$

12. $(5^4)^3$

▶ 13. $(3^2)^4$

14. $4^5 \cdot 4^7$

15. $7^6 \cdot 7$

16. $(1^{12})^3$

17. $(5^2)^3$

18. $6^2 \cdot 6^4$

1 MTR

19. **HELP A CLASSMATE** Your friend wants to simplify the expression $5^2 \cdot 5^9$. Explain how your friend can complete their work.

$5^2 \cdot 5^9 = (5)$
$=$

FINDING A POWER OF A PRODUCT **Simplify the expression. Write your answer as a product of powers.** (See Example 3.)

20. $(6 \cdot 4)^3$

▶ 21. $(3 \cdot 7)^5$

22. $(2 \cdot 9)^4$

23. $(8 \cdot 7)^4$

24. $(1 \cdot 5)^{12}$

25. $(10 \cdot 3)^2$

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26. **STRUCTURE** Is $3^2 + 3^3$ equal to 3^5? Explain.