

Date:

Title:

(A) **Fast Five**

- **UNDERSTANDING:** What do we mean by the term “equation”?

- **Working with Formulas**
 1. If the volume of a cylinder is determined by the formula $V = \pi r^2 h$, then find the value of V if $r = 2$ cm and $h = 8$ cm. Round your answer to 3 significant digits.
 2. If the volume of a cone is determined by $V = \frac{1}{3} \pi r^2 h$ then find the value of V if $r = 12$ cm and $h = 5$ cm. Round your answer to 3 significant digits.
 3. If the perimeter of a rectangular field is determined by $P = 2l + 2w$, then find the value of P if $l = 16$ cm and $w = 35$ cm.
 4. If the equation relating a ramp height to distance travelled is $d = 10h + 30$, then find the distance travelled by a ball if the ramp height was 6 cm.

(B) **Explorations/Development**

- Now let's change our workings with these formula:

 1. If the volume of a cylinder is determined by the formula $V = \pi r^2 h$, then find the value of h if $r = 2$ cm and $V = 82$ cm³. Round your answer to 4 significant digits.
 2. If the volume of a cylinder is determined by the formula $V = \pi r^2 h$, then rearrange the equation so that h is isolated.
 3. If the volume of a cylinder is determined by the formula $V = \pi r^2 h$, then rearrange the equation so that r is isolated.

 4. If the volume of a cone is determined by $V = \frac{1}{3} \pi r^2 h$ then find the value of h if $r = 12$ cm and $V = 225$ cm³. Round your answer to 2 significant digits.
 5. If the volume of a cone is determined by $V = \frac{1}{3} \pi r^2 h$ then rearrange the equation so that h is isolated.
 6. If the volume of a cone is determined by $V = \frac{1}{3} \pi r^2 h$ then rearrange the equation so that r is isolated.
 7. If the perimeter of a rectangular field is determined by $P = 2l + 2w$, then find the value of l if $P = 64$ cm and $w = 15$ cm.
 8. If the perimeter of a rectangular field is determined by $P = 2l + 2w$, then rearrange the equation so that l is isolated.

 9. If the equation relating a ramp height to distance travelled is $d = 10h + 30$, then find the ramp height if the distance travelled by a ball was 76 cm.
 10. If the equation relating a ramp height to distance travelled is $d = 10h + 30$, then rearrange the equation so that h is isolated.

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SUMMARY: EXPLAIN in words HOW you rearrange an equation in order to isolate one of the variables

- UNDERSTANDING: What do we mean by the term “equation”?
- An equation is simply a way to show a relationship between quantities/variables
- An equation is a way to summarize number patterns

(C) Classwork

- Go to the link from The Algebra Project →
<http://www.teacherweb.com/NY/Arlington/AlgebraProject/L8RearrangingFormulasLiteralEquations.pdf>

(D) Homework/Resources

- HOMEWORK:
- Practice from AlgebraLab:
http://www.algebralab.org/practice/practice.aspx?file=Algebra1_3-6.xml
- Help from PurpleMath: <http://www.purplemath.com/modules/solvelit.htm>
- Practice from AnalyzeMath:
http://www.analyze-math.com/Equations/literal_equations.html