

Make sense of problems and persevere in solving them



When presented with a problem, I can make a plan, carry out my plan, and evaluate its success.

BEFORE...

EXPLAIN the problem to myself.

- *Have I solved a problem like this before?*

ORGANIZE information...

- *What is the question I need to answer?*
- *What is given?*
- *What is not given?*
- *What are the relationships between known and unknown quantities?*
- *What tools will I use?*
- *What prior knowledge do I have to help me?*

DURING...

PERSEVERE

MONITOR my work

CHANGE my plan if it isn't working out

ASK myself, "Does this make sense?"

AFTER...

CHECK

- *Is my answer correct?*
- *How do my representations connect to my algorithms?*

EVALUATE

- *What worked?*
- *What didn't work?*
- *What other strategies were used?*
- *How was my solution similar to or different from my classmates'?*

Dave's Work & Answers

p. 153, #40 and p. 162, #48

Work	Thoughts
Page 153, #40 $\left(\frac{2bc^2}{5b^{-1}b^{-2}}\right)^{-1}$	I picked this problem because it wasn't assigned and I didn't want to do one someone else might want to present at the board. First, I should check that I copied it correctly (the fact that 2 of the same variable are in the denominator is a red flag); everything is correct.
$\left(\frac{2bc^2b^1b^2}{5}\right)^{-1}$	I'm going to start with a simpler problem and ignore the negative 1 outside the parentheses. Inside, I look for negative exponents and switch them between top and bottom to remove the negative sign.
$\left(\frac{2bb^1b^2c^2}{5}\right)^{-1}$	The associative property of multiplication allows me to regroup the variables so I can gather the like variables.
$\left(\frac{2b^4c^2}{5}\right)^{-1}$	When I combine like terms I am multiplying bxbxbxb together so I rewrite that as b to the fourth. I cannot do any further meaningful simplification (though I could write 2 divided by 5 as .4).
$\frac{1}{\left(\frac{2b^4c^2}{5}\right)}$	Now to deal with the negative one. Many of us think of this as, "take the reciprocal of..." so I rewrite it as one over all that stuff. I don't have to write the one since anything to the first power is that thing. But a fraction within a fraction is frowned upon so I must deal with the five.
$\frac{1}{\left(\frac{2b^4c^2}{5}\right)} \times \frac{5}{5}$	By multiplying the expression by 5 over 5 (which is one) I do not change its value; but now I can cancel out the five in the denominator.
$\frac{5}{2b^4c^2}$	Therefore, this is my simplified answer. No negative exponents and no fractions inside of fractions, so I'm ready to share it as my final answer.