

Have you lost your marbles?

Marcus had a collection of 24 marbles. While Marcus was gone for a weekend camping trip, his big brother, Derik, borrowed $\frac{1}{2}$ of his marbles. His younger brother took $\frac{1}{4}$ of the remaining marbles to play with. Finally, his sister borrowed $\frac{1}{3}$ of the remaining marbles to use in her fish tank. When Marcus got home after his camping trip, how many marbles were left in his collection?



<p>Novice</p>	<p>No strategy is chosen or a strategy is chosen that will not lead to a solution. Little or no evidence of engagement in the task. Neither correct reasoning nor justification for reasoning is present. Little or no communication of an approach is evident with mathematical language. No connections are made. No attempt is made to construct mathematical representations.</p>
<p>Apprentice</p>	<p>A partially correct strategy is chosen. Evidence of previous knowledge. Arguments are made with some mathematical basis. Some formal math language is used, and examples are provided to communicate ideas. Some effort is made to relate to own interests and experiences. An attempt is made to construct mathematical representations to record and communicate problem solving.</p>
<p>Practitioner</p>	<p>A correct strategy is chosen. Evidence of applying prior knowledge is present. Arguments are constructed with adequate mathematical knowledge. Systematic approach or correct reasoning is present. Precise math language is used with audience in mind. Mathematical connections are recognized. Appropriate mathematical presentations are used.</p>
<p>Expert</p>	<p>An efficient strategy is used. A correct answer is given. Evidence is used to justify and support decisions. Precise math language is used to communicate to an appropriate audience. Mathematical connections or observations are used to extend the solution. Abstract or symbolic mathematical representations are constructed to analyze relationships, extend thinking and clarify or interpret phenomenon.</p>