

DATABÁZE ÚLOHY PRO NADANÉ

Čarodějnická logika MATEMATIKA A LOGIKA

učivo 1. stupně

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EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Výzkum, vývoj a vzdělávání



jihomoravský kraj

Čarodějnice Algebra je popleta a zamotala se do svých výpočtů při tvorbě lektvarů. Pomůžeš jí?

$$\begin{array}{c} \text{Red potion} \\ \square \end{array} + \begin{array}{c} \text{Red potion} \\ \square \end{array} + \begin{array}{c} \text{Blue bottle} \\ \square \end{array} = 52$$

$$\begin{array}{c} \text{Green bottle} \\ \square \end{array} = ?$$

$$\begin{array}{c} \text{Pumpkin} \\ \square \end{array} + \begin{array}{c} \text{Red potion} \\ \square \end{array} + \begin{array}{c} \text{Pumpkin} \\ \square \end{array} = 64$$

$$\begin{array}{c} \text{Red potion} \\ \square \end{array} = ?$$

$$\begin{array}{c} \text{Blue bottle} \\ \square \end{array} + \begin{array}{c} \text{Blue bottle} \\ \square \end{array} + \begin{array}{c} \text{Blue bottle} \\ \square \end{array} = 72$$

$$\begin{array}{c} \text{Blue bottle} \\ \square \end{array} = ?$$

$$\begin{array}{c} \text{Purple bottle} \\ \square \end{array} + \begin{array}{c} \text{Blue bottle} \\ \square \end{array} + \begin{array}{c} \text{Purple bottle} \\ \square \end{array} = 54$$

$$\begin{array}{c} \text{Pumpkin} \\ \square \end{array} = ?$$


$$\begin{array}{c} \text{Green bottle} \\ \square \end{array} + \begin{array}{c} \text{Red potion} \\ \square \end{array} + \begin{array}{c} \text{Purple bottle} \\ \square \end{array} = 65$$

$$\begin{array}{c} \text{Purple bottle} \\ \square \end{array} = ?$$

Algebře přišla na pomoc její sestra Geometra. Jsou to sestry, obě popletené, a proto potřebuje také tvoji pomoc.

$2 \cdot \square + 3 \cdot \square = \square$	  	 = ?
$\square + \square + \square = \square$	   	 = ?
$2 \cdot \square + \square = \square$	  	 = ?
$\square - \square - \square = \square$	   	 = ?
$\square + \square + \square + \square = \square$	    	
	 = ?	


Doplň do lektvarů různé přísady tak, aby platila rovnost/nerovnost.




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Řešení:

$$\begin{array}{c} \text{blue bottle} \\ \boxed{24} \end{array} + \begin{array}{c} \text{blue bottle} \\ \boxed{24} \end{array} + \begin{array}{c} \text{blue bottle} \\ \boxed{24} \end{array} = 72$$

$$72 : 3 = 24$$

$$\begin{array}{c} \text{purple bottle} \\ \boxed{15} \end{array} + \begin{array}{c} \text{blue bottle} \\ \boxed{24} \end{array} + \begin{array}{c} \text{purple bottle} \\ \boxed{15} \end{array} = 54$$

$$54 - 24 = 30$$

$$30 : 2 = 15$$

$$\begin{array}{c} \text{green bottle} \\ \boxed{36} \end{array} + \begin{array}{c} \text{red bowl} \\ \boxed{14} \end{array} + \begin{array}{c} \text{purple bottle} \\ \boxed{15} \end{array} = 65$$

$$65 - 29 = 36$$

$$\begin{array}{c} \text{red bowl} \\ \boxed{14} \end{array} + \begin{array}{c} \text{red bowl} \\ \boxed{14} \end{array} + \begin{array}{c} \text{blue bottle} \\ \boxed{24} \end{array} = 52$$

$$52 - 24 = 28$$

$$28 : 2 = 14$$

$$\begin{array}{c} \text{red pumpkin} \\ \boxed{25} \end{array} + \begin{array}{c} \text{red bowl} \\ \boxed{14} \end{array} + \begin{array}{c} \text{red pumpkin} \\ \boxed{25} \end{array} = 64$$

$$64 - 14 = 50$$

$$50 : 2 = 25$$



= 24



= 15



= 14



= 25



= 36

$$2 \cdot \begin{array}{|c|} \hline 8 \\ \hline \end{array} + 3 \cdot \begin{array}{|c|} \hline 3 \\ \hline \end{array} = \begin{array}{|c|} \hline 25 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 3 \\ \hline \end{array} = 3$$

$$\begin{array}{|c|} \hline 12 \\ \hline \end{array} + \begin{array}{|c|} \hline 12 \\ \hline \end{array} + \begin{array}{|c|} \hline 12 \\ \hline \end{array} = \begin{array}{|c|} \hline 36 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 12 \\ \hline \end{array} = 12$$

$$36 : 3 = 12$$

$$2 \cdot \begin{array}{|c|} \hline 8 \\ \hline \end{array} + \begin{array}{|c|} \hline 8 \\ \hline \end{array} = \begin{array}{|c|} \hline 24 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 8 \\ \hline \end{array} = 8$$

$$24 : 3 = 8$$

$$\begin{array}{|c|} \hline 15 \\ \hline \end{array} - \begin{array}{|c|} \hline 8 \\ \hline \end{array} - \begin{array}{|c|} \hline 3 \\ \hline \end{array} = \begin{array}{|c|} \hline 4 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 4 \\ \hline \end{array} = 4$$

$$\begin{array}{|c|} \hline 4 \\ \hline \end{array} + \begin{array}{|c|} \hline 8 \\ \hline \end{array} + \begin{array}{|c|} \hline 3 \\ \hline \end{array} + \begin{array}{|c|} \hline 12 \\ \hline \end{array} = \begin{array}{|c|} \hline 27 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 27 \\ \hline \end{array}$$

$$\begin{array}{ccccccc}
 12 & & 4 & & 8 & & 24 \\
 \text{claw} & + & \text{lung} & + & \text{frog} & = & \text{flask}
 \end{array}$$

$$\begin{array}{ccccccc}
 12 & & 4 & & 8 & & 3 \\
 \text{claw} & + & \text{lung} & > & \text{frog} & + & \text{heart}
 \end{array}$$

nebo

$$\begin{array}{ccccccc}
 12 & & 3 & & 8 & & 4 \\
 \text{claw} & + & \text{heart} & > & \text{frog} & + & \text{lung}
 \end{array}$$

Do nerovností jdou doplnit také lektvary: existují i další řešení.

$$\begin{array}{ccccc}
 12 & & & & 4 \\
 \text{claw} & - & \text{frog} & = & \text{lung}
 \end{array}$$

$$\begin{array}{c}
 \text{24} \\
 \text{blue bottle}
 \end{array}
 +
 \begin{array}{c}
 \text{3} \\
 \text{heart}
 \end{array}
 =
 \begin{array}{c}
 \text{27} \\
 \text{beer mug}
 \end{array}$$

nebo

$$\begin{array}{c}
 \text{36} \\
 \text{green bottle}
 \end{array}
 -
 3 \cdot
 \begin{array}{c}
 \text{3} \\
 \text{heart}
 \end{array}
 =
 \begin{array}{c}
 \text{27} \\
 \text{beer mug}
 \end{array}$$

nebo

$$\begin{array}{c}
 \text{3} \\
 \text{heart}
 \end{array}
 +
 6 \cdot
 \begin{array}{c}
 \text{4} \\
 \text{hand}
 \end{array}
 =
 \begin{array}{c}
 \text{27} \\
 \text{beer mug}
 \end{array}$$

Zdroje:

Pictures. Pictures [online]. 2023 [cit. 2023-04-10]. Dostupné z: <<http://canva.com/>>.

