

Dutch teacher and her 7th grade students provided the following example.

Arthur and Renee make coffee with a coffee maker. Arthur uses 2 scoops of coffee for 5 cups of coffee. Renee uses 3 scoops of coffee for 7 cups of coffee. Who makes the strongest coffee?

The teacher made the following scoring guide.

	number of points
Correct answer/conclusion	1 point
Correct work	2 points

### Student 1

$$\begin{array}{r|l} 2 & 14 \\ \hline 5 & 35 \\ \uparrow 7 \times & \\ \downarrow 5 \times & \\ 3 & 15 \\ \hline 7 & 35 \\ \downarrow 5 \times & \end{array}$$

Renee, see table

### Student 2

$$\begin{array}{r|l|l|l} \text{A coffee} & 2 & 4 & 7\frac{1}{2} \\ \hline \text{Cups} & 5 & 10 & 4\frac{1}{2} \end{array}$$

$$\begin{array}{r|l|l} \text{R coffee} & 3 & 1\frac{1}{2} \\ \hline \text{Cups} & 7 & 3\frac{1}{2} \end{array}$$

Arthur makes  
stronger coffee

### Student 3

$$\begin{array}{rcl} 2 & - & 5 \times 7 = 35 \quad 14 \\ 3 & - & 7 \times 5 = 35 \quad (15) \end{array}$$

**Student 4**

3	6	12	24
7	14	25	50

3 to 7 is stronger

			<del>20</del>
			<del>50</del>

**Student 5**

They are the same

3 7      4-3-1  
2 5      2-3-1

**Student 6**

The coffee of Renee is stronger

	3	6	12	} Renee
because				
scops	3	6	12	} Arthur
cups	7	14	28	
scops	2	4	8	
cups	5	10	20	

now you see that the coffee of Renee is stronger than Artur. I think

Student 7

	$\times 5$		
Cups	5	1	7
coffee	2	0.4	2.8
		$\times 5$	$\times 7$

three scoops are sharper

Student 8

Arthur	$\times 10$		
scoops	2	20	40
cups	5	50	100
Renee	$\times 100$		
scoops	3	300	12
coffee	1	100	100
		$\times 100$	$\times 7$

40% scoops coffee

42% scoops coffee

Student 9

Arthur's	$\times 6$	
sc	2	12
cups	5	30
		$\times 6$

Renee	$\times 4$	
sc	3	12
cups	7	28
		$\times 4$

↑ strongest coffee

Student 10

Renee  $\frac{3}{7} = \frac{15}{35}$

and Arthur  $\frac{2}{5} = \frac{14}{35}$  so Renee

**Student 11**

I think that Arthur makes stronger coffee  
Because if you calculate  $7:3$  you get  $2.3$   
and  $5:2 = 2.5$

**Student 12**

of Renee is stronger because the  
proportion is bigger.

**Student 13**

Scoops	2	4
cups of coffee	5	1

$\frac{5}{2}$

	3	6
cups of coffee	7	14

$\frac{5}{2}$

$\frac{14}{6}$

14/600 |

280 - 20x

320

280 - 20x

40

32 - 3x

80

0,