

Mathematics Assessment Program

Middle School Mathematics

Short Tasks: Functions

1. Helpers are needed to prepare for the fete. Each helper can make either 2 large cakes or 35 small cakes per hour. The kitchen is available for 3 hours, and 20 large cakes and 700 small cakes are needed. How many helpers are required?
2. After being dropped, a certain ball always bounces back to $\frac{2}{5}$ of the height of its previous bounce. After the first bounce it reaches a height of 125 inches. How high (in inches) will it reach after its fourth bounce?
3. Jeff takes 20 minutes to jog around the race course one time, and 25 minutes to jog around a second time. What is his average speed in miles per hour for the whole jog if the course is 3 miles long?
4. In a certain village, m liters of water are required per household per month. At this rate, if there are n households in the village, how long (in months) will p liters of water last?
5. Draw a ring around the equation of this graph.

$$\begin{aligned}y &= 3x - 2 \\y &= x^3 - 2 \\y &= -2x^2 - 2 \\y &= 3x^2 - 2 \\y &= \frac{3}{x} - 2\end{aligned}$$

