Short Tasks: Creating Equations 1

1. If $V = \frac{12R}{(r + R)}$ make R the subject of the equation.

2a. Jane, Maria, and Ben each have a collection of marbles. Jane has 15 more marbles than Ben, and Maria has 2 times as many marbles as Ben. All together they have 95 marbles. Find how many marbles Maria has.

2b. Dave sold 40 tickets for a concert. He sold $x$ tickets at $2 each and $y$ tickets at $3 each. He collected $88.
Write down two equations connecting $x$ and $y$.
Solve these two equations to find how many of each kind of ticket he sold.

2c. A rectangle has length $(x + 5)\text{cm}$ and width $(x - 2)\text{cm}$. Its area is $60 \text{cm}^2$.
Write a quadratic equation, and solve it to find the length and width of this rectangle.