Solve simple one-step equations

1. Write an equation for each part-whole model. Work out the value of the multilink cube in each equation.
   
   a) ![Part-whole model with 6](image1)
   
   b) ![Part-whole model with 18](image2)

2. There are some counters under the cup.

   There are 10 counters in total.
   
   a) If \( c \) is the number of counters under the cup, explain why \( c + 6 = 10 \)
   
   b) Work out the value of \( c \).
   
   c) How many counters are under the cup?

3. Write algebraic equations to represent the bar models. Find the value of \( a \) in each one.

   a) ![Bar model with 8 and a](image3)
   
   b) ![Bar model with 15 and a](image4)
   
   c) ![Bar model with a](image5)
   
   d) ![Bar model with 7 and 6](image6)

4. Nijah is solving the equation \( x - 8 = 20 \)

   \[
   \begin{align*}
   x - 8 &= 20 \\
   x &= 20 + 8 \\
   x &= 28
   \end{align*}
   \]

   What mistake has Nijah made?

   

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Solve the equations.

a) $x + 7 = 20$
d) $g - 3 = 15$

$x = \underline{\hspace{1cm}}$
$g = \underline{\hspace{1cm}}$

b) $10y = 80$
e) $32 = t - 5$

$y = \underline{\hspace{1cm}}$
t = $\underline{\hspace{1cm}}$

c) $4m = 22$
f) $\frac{u}{6} = 3$

$m = \underline{\hspace{1cm}}$
u = $\underline{\hspace{1cm}}$

Filip thinks of a number.
He subtracts 5 from his number.
He ends up with 10
Write an algebraic equation to represent Filip's problem.

$\underline{x - 5 = 10}$

Solve the equation to work out his number.

$
x = \underline{\hspace{1cm}}$

Dexter builds a tower.
Each block is $2a$ high.
He uses 7 blocks.
The total height of his tower is 42 cm.
Write an equation to represent the height of Dexter’s tower and find the value of $a$.

$\alpha = \underline{\hspace{1cm}}$ cm

Work out the value of each shape.
Write the equations that you solved to find the value of each shape.

$\star = \underline{\hspace{1cm}}$
$\heart = \underline{\hspace{1cm}}$
$\triangle = \underline{\hspace{1cm}}$

Work out the missing total of each row and column.
Compare answers with a partner.