## Year 7

## Equality and Equivalence

Name $\qquad$
(I) Complete the fact family for this bar model.


$$
8+4=12
$$

(2) Complete the fact family for this bar model.

| 28 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 7 | 7 | 7 | 7 |  |

$$
4 \times 7=28
$$

(3) Solve these equations.

$$
a+37=83
$$

$$
24=b-7.6
$$

$$
a=
$$

$\qquad$

$$
\frac{c}{9}=40
$$

$$
b=
$$

$\qquad$

$$
60=5 d
$$

$$
c=
$$

$\qquad$

$$
d=
$$

$\qquad$
(4) Make up an equation which has solution $x=7$
(5) Sam thinks of a number.

She subtracts 87 from his number and gets the answer 254
Show this information as an equation.

Solve the equation to find Sam's number.
(6) Sort the following into two sets of like terms.

(7) Tick the expressions that are equivalent to $5 b$.

(8) Simplify these expressions by collecting like terms.
$4 x+3 x-2 x$
$5 c+3 d+2 d+8 d$

Is Tim correct? Explain your answer.
$8 t+2 t^{2}-3 t+2 t^{2}$
(9) An expression has four terms.

When simplified, the expression becomes $6 x+3$ What might the expression be?
(10) Tim says that the following expressions are equivalent to each other.


$$
5+2 n
$$

