Turning word problems into number sentences

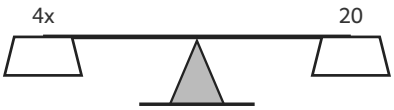
MODULE 10 · ALGEBRA — PATTERNS, RULES AND NUMBER SENTENCES ALGEBRA

HOW TO ANSWER TODAY

- **Solve for x.** Do the OPPOSITE operation to both sides. + becomes −; × becomes ÷.
  $x + 7 = 15 \rightarrow x = 15 - 7 = 8$ $3x = 21 \rightarrow x = 21 \div 3 = 7$
- **Function machine.** Do EACH step of the rule in order to the input.

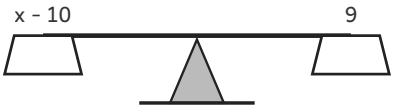
STRETCH PROBLEMS

1. At the school sports day, **4** relay teams each have the same number of runners. Altogether there are **20** runners taking part. If x is the number of runners on each team, so that 4x = **20**, how many runners are on each team?



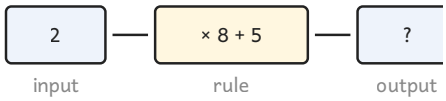
Find x so the scale balances.

2. Aoife watches the classroom bird feeder. After **10** birds fly away, **9** birds are still feeding. If x is the number of birds at the start, then x - **10** = **9**. How many birds were there at the start?

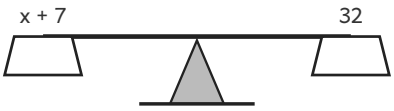


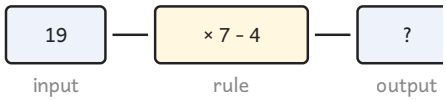
Find x so the scale balances.

3. Mr Ó Braonáin sets up a function machine on the whiteboard while 3rd class line up for the yard. The rule is multiply by **8**, then add **5**. If Tadhg feeds in the number **2**, what number comes out?



4. Cian is stacking milk cartons in the school canteen fridge. After he adds **7** more cartons, there are **32** cartons in total. If x stands for the number of cartons that were already there, solve x + **7** = **32** to find how many cartons he started with.



Find x so the scale balances.

5. At Camogie training, Aoife uses a scoring machine with the rule multiply by **7**, then subtract **4**. She feeds in the number **19**. What number comes out?