

Yr 6 Algebra Unit 1 (6323)

Additional teacher instructions for practice sheets

These notes indicate which practice sheets are most appropriate for which groups.

Day 1 Write a formula Sheet 1

Working towards ARE / Working at ARE / Greater Depth

Day 2 Function machines Sheet 1

Working towards ARE / Working at ARE

Working at ARE can try the second sheet if they are able to complete these.

Day 2 Function machines Sheet 2

Greater Depth

Write a formula

Sheet 1

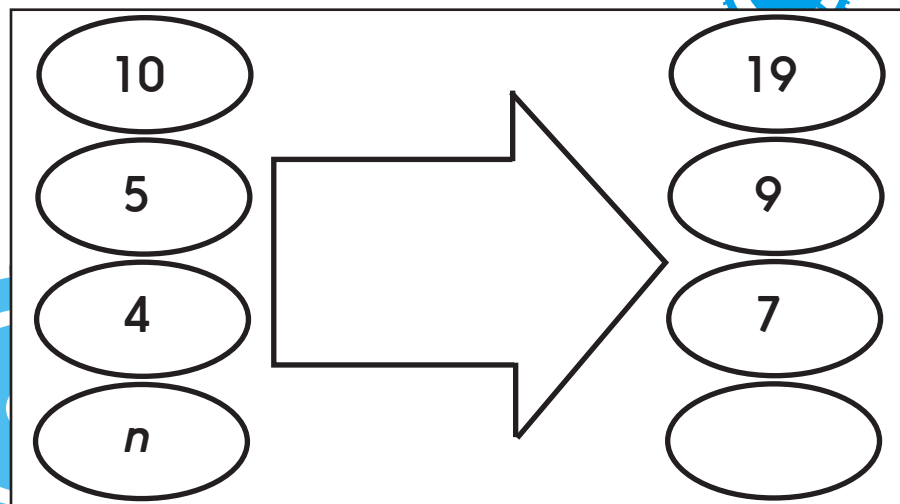
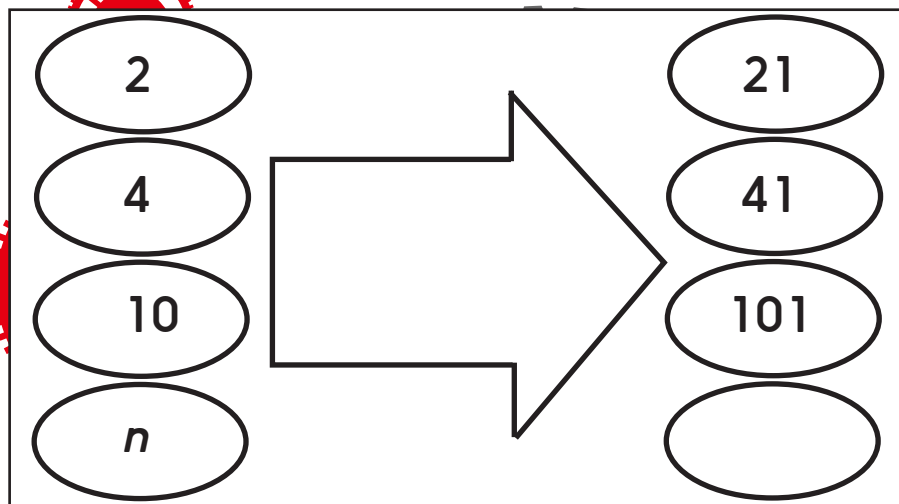
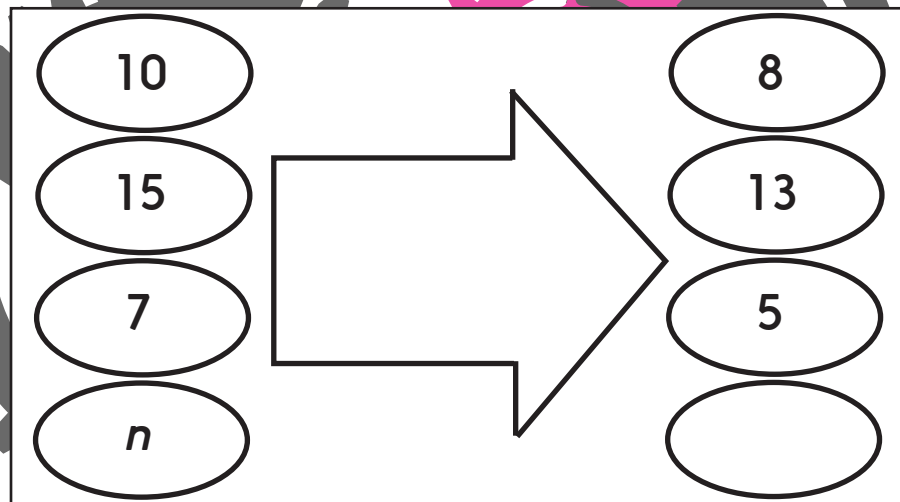
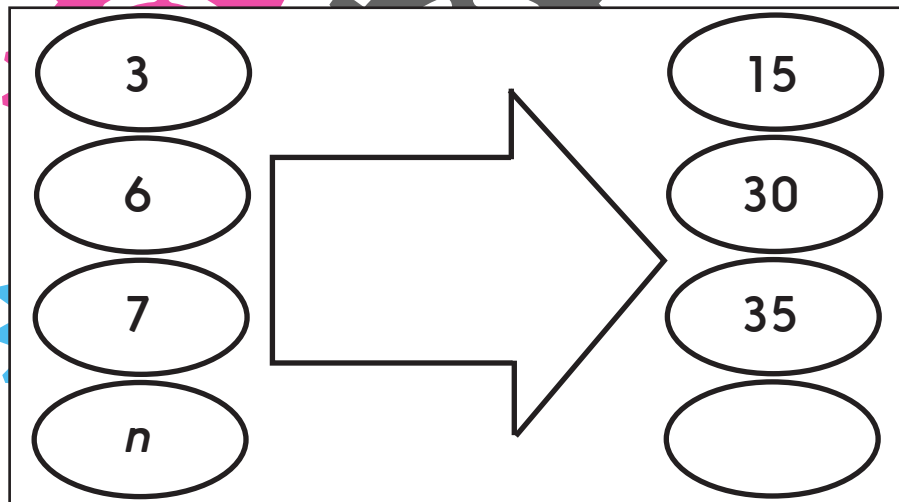
Discuss how these prices/amounts would be worked out with a partner, and then write a formula using n . Make $n=5$ in each example to see if the answer makes sense using your formula.

1. Stamps cost 52p each. The cost of n stamps is...
2. The number of wheels on n cars is...
3. The number of months in n number of years is...
4. For n fence panels, ... fence posts are needed.
5. The change from £10 after buying n apples at 25p each is...
6. The time to cook a chicken weighing n kg, at 45 minutes per kilogram and 20 minutes extra is...
7. The distance travelled when a bike wheel turns 20 times and the circumference of the wheel is n , is...
8. The price of an item costing n pounds after VAT of 20% added.

Function machines

Sheet 1

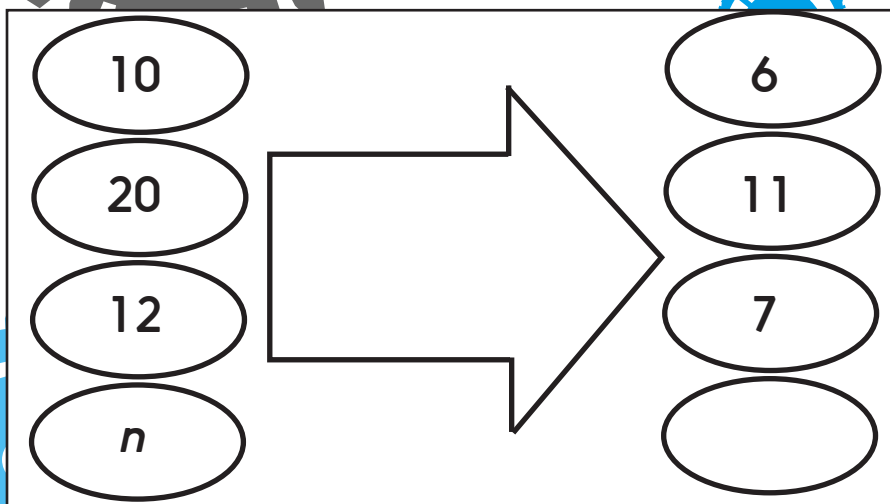
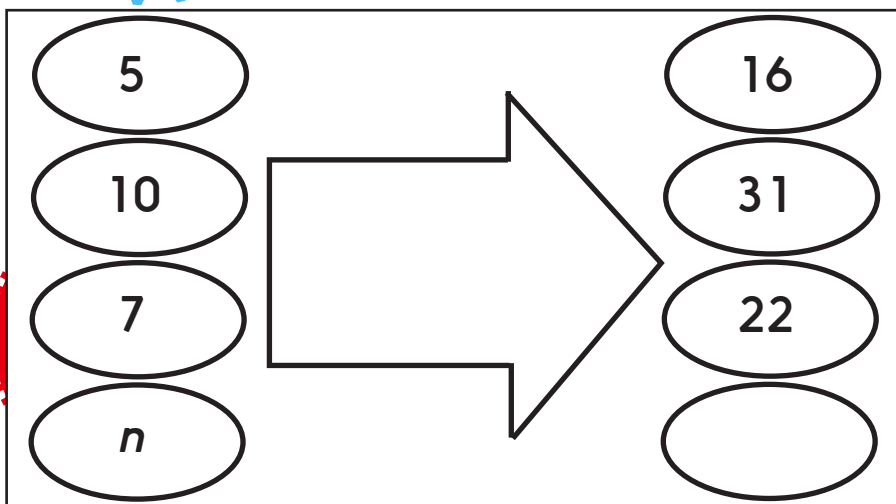
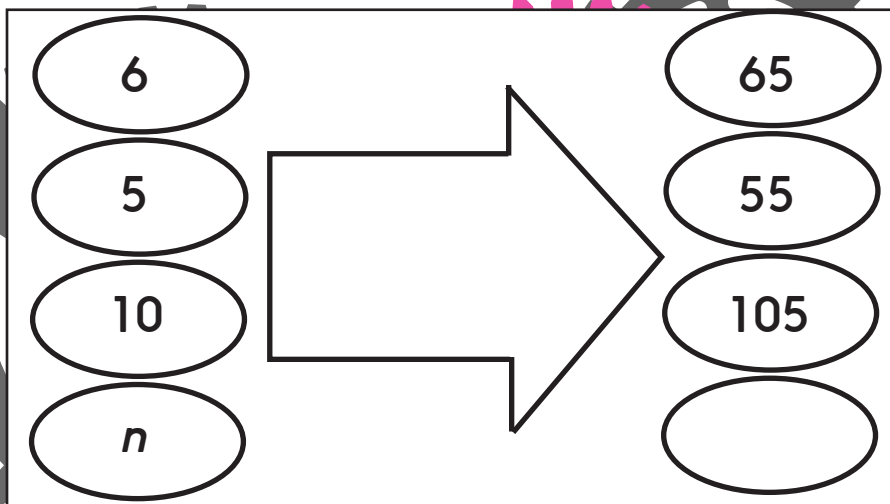
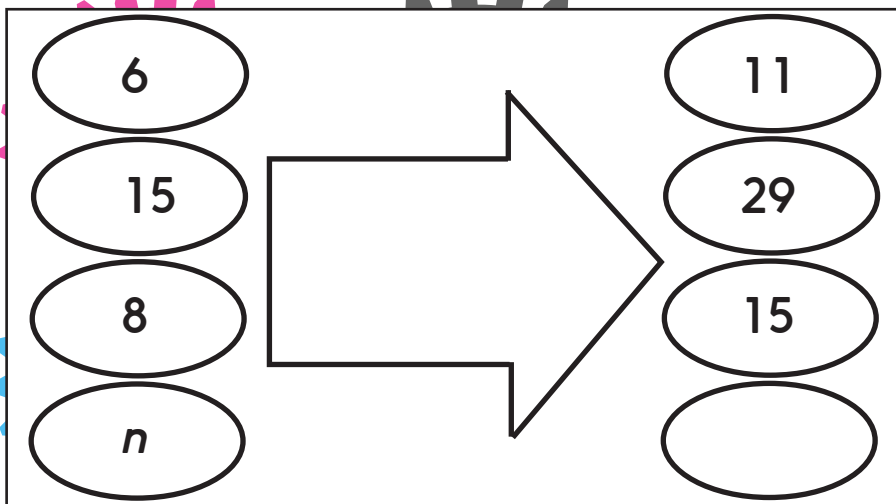
Work out what each function machine does. Write the output when n is the input.



Function machines

Sheet 2

Work out what each function machine does. Write the output when n is the input.



Challenge

Create your own two step function machine. Choose 3 inputs and find their outputs, swap with a partner. Can you discover each other's secret function?

Algebra

Answers

Day 1 Write a formula Sheet 1

1. The cost of n stamps is $52n$ (in pence) or $0.52n$ (in pounds).
2. The number of wheels on n cars is $4n$.
3. The number of months in n years is $12n$.
4. For n fence panels, $n + 1$ fence posts are needed.
5. The change from £10 after buying n apples at 25p each is $£(10 - 0.25n)$.
6. The time to cook a chicken weighing n kg, at 45 minutes per kilogram and 20 extra minutes is $45n + 20$ minutes.
7. The distance travelled when a bike wheel turns 20 times and the circumference of the wheel is n , is $20n$.
8. The price of an item cost n pounds after VAT of 20% added is $£1.2n$.

Day 2 Function machines Sheet 1

$$3 \times 5 = 15$$

$$6 \times 5 = 30$$

$$7 \times 5 = 35$$

$$5n$$

$$10 - 2 = 8$$

$$15 - 2 = 13$$

$$7 - 2 = 5$$

$$n - 2$$

$$2 \times 10 + 1 = 21$$

$$4 \times 10 + 1 = 41$$

$$10 \times 10 + 1 = 101$$

$$10n + 1$$

$$10 - 1 + 10 = 19$$

$$5 - 1 + 5 = 9$$

$$4 - 1 + 4 = 7$$

$$2n - 1$$

Day 2 Function machines Sheet 2

$$6 - 1 + 6 = 11$$

$$15 - 1 + 15 = 29$$

$$8 - 1 + 8 = 15$$

$$2n - 1$$

$$6 \times 10 + 5 = 65$$

$$5 \times 10 + 5 = 55$$

$$10 \times 10 + 5 = 105$$

$$10n + 5$$

$$5 \times 3 + 1 = 16$$

$$10 \times 3 + 1 = 31$$

$$7 \times 3 + 1 = 22$$

$$3n + 1$$

$$10 \div 2 + 1 = 6$$

$$20 \div 2 + 1 = 11$$

$$12 \div 2 + 1 = 7$$

$$n \div 2 + 1$$