

# Know and use mental arithmetic strategies for decimals

1 Work out the calculations in your head.

a)  $0.5 + 0.3 = 0.8$

e)  $0.9 - 0.2 = 0.7$

b)  $0.5 + 0.5 = 1$

f)  $0.7 - 0.5 = 0.2$

c)  $0.2 + 0.7 = 0.9$

g)  $0.5 - 0.5 = 0$

d)  $0.6 + 0.4 = 1$

h)  $0.3 + 0.6 - 0.2 = 0.7$

2



0.7 + 0.5 is equal to 0.12

What mistake has Dexter made? What is the correct answer?

He hasn't considered place value.

7 tenths + 5 tenths = 12 tenths and 10 tenths = 1 whole

so  $0.7 + 0.5 = 1.2$

3

Complete the statements.

a)  $0.5 + 0.8 = 1.3$

c)  $0.9 + 0.8 = 1.7$

b)  $0.6 + 0.6 = 1.2$

d)  $0.3 + 0.5 + 0.8 = 1.6$

e)  $0.2 + 0.9 = 1.1$

g)  $0.7 + 0.7 = 1.4$

f)  $0.5 + 0.6 = 1.1$

h)  $0.9 + 0.7 = 1.6$

4

Dora is working out  $12.3 + 4.5$  mentally.

I added the whole part first:  $12 + 4 = 16$

I then added the decimal part:  $0.3 + 0.5 = 0.8$

I then added 16 and 0.8 to get 16.8. So  $12.3 + 4.5 = 16.8$

Use Dora's method or another method to work out the additions mentally.

a)  $2.6 + 3.2 = 5.8$

d)  $19.8 + 40.1 = 59.9$

b)  $13.2 + 2.7 = 15.9$

e)  $2.8 + 0.4 = 3.2$

c)  $26.5 + 32.4 = 58.9$

f)  $11.5 + 2.9 = 14.4$

5

Mr Jones wants to buy these items in the supermarket.

a) Work out the total cost of the items mentally.

b) Check your answer on a calculator.

Talk about your method with a partner.

$£8.24$

6 a) Work out the subtractions.

$3 - 0.2 = 2.8$

$1 - 0.6 = 0.4$

$3 - 0.3 = 2.7$

$2 - 0.6 = 1.4$

$3 - 0.4 = 2.6$

$3 - 0.6 = 2.4$

$3 - 0.5 = 2.5$

$5 - 0.6 = 4.4$

$3 - 0.7 = 2.3$

$8 - 0.6 = 7.4$

$3 - 0.9 = 2.1$

$11 - 0.6 = 10.4$

What do you notice?

b) Work out the multiplications.

$0.4 \times 3 = 1.2$

$0.3 \times 0.5 = 0.15$

$0.4 \times 4 = 1.6$

$0.8 \times 0.2 = 0.16$

$0.4 \times 5 = 2$

$0.5 \times 0.7 = 0.35$

$0.6 \times 7 = 4.2$

$0.6^2 = 0.36$

$0.6 \times 8 = 4.8$

$0.2 \times 0.3 = 0.06$

$0.6 \times 9 = 5.4$

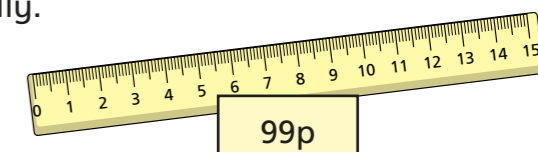
$0.9 \times 0.7 = 0.63$

7 Explain how you can mentally work out  $3.4 - 1.8$ .

e.g.  $3.4 - 2 = 1.4$

$1.4 + 0.2 = 1.6$

8 a) Work out the cost of 5 rulers mentally.



$£ 4.95$

b) Work out the cost of 3 cups of coffee mentally.



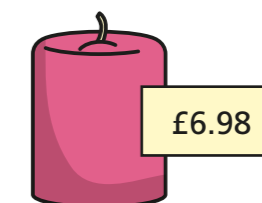
$£ 8.97$

c) Work out the cost of 7 books mentally.



$£ 34.93$

d) Work out the cost of 7 candles mentally.



$£ 48.86$

9 Here are some multiplications and divisions.  
Work them out mentally.

a)  $2.4 \div 4 = 0.6$     c)  $0.32 \div 8 = 0.04$     e)  $4.5 \div 5 = 0.9$

b)  $3.2 \times 3 = 9.6$     d)  $1.7 \times 7 = 11.9$     f)  $3.9 \times 11 = 42.9$

Talk about your method with a partner.