Maths Assessment Year 6: Addition and Subtraction

1. Perform mental calculations, including with mixed operations and large numbers.

2. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

3. Use knowledge of the order of operations to carry out calculations involving the four operations.

4. Solve problems involving addition, subtraction, multiplication and division.

5. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Name: Date:

Maths Assessment Year 6: Addition and Subtraction

1. Perform mental calculations, including with mixed operations and large numbers.

Answer the questions your teacher reads out loud. Just write the answer:

a) km	b) cars
c)	d) £
e)	f)
g)	h) cm
i)	j)

10 marks

2. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

a) Sophie buys two sandwiches which are the same price. She pays £3.00 and receives 80p change. What is the cost of <u>one</u> sandwich?

Show your working out:

2 marks

b) The children in Year 6 were picking which activities to take part in on a school trip. There are 60 children in Year 6.

Half the class chose canoeing.

18 children chose abseiling.

The rest of the children chose rock-climbing.

How many children chose rock-climbing?

Show your working out:

2 marks

Total for this page

c) A school cook needs to work out which hot dinners are served at lunchtime.

Use the information below to fill in the missing information:

meal	number of portions served
jacket potatoes	16
spaghetti bolognese	
chilli and rice	
chicken curry	
total	70

The number of spaghetti bolognese portions served is half the number of jacket potatoes.

The number of chilli and rice portions served is 19 more than the number of spaghetti bolognese portions.

d) Ryan has been saving money from washing cars. He has £14 in his wallet and £27 in his money box.

He wants to buy an action figure which costs £25 and a computer game which costs £19.

How much <u>more</u> money does he need to save?

Show your working out:

e) Jacob and Isla earn money by delivering newspapers.

Isla earns £41 and Jacob earns £35. They split the money equally.

How much money do they receive each?

Show your working out:

f) This table shows the cost of school uniform items:

item	price
shirt/blouse	£7.25
trousers	£8.85
school jumper	£10.55
pair of socks	99p

What is the cost of a complete school uniform?

3. Use knowledge of the order of operations to carry out calculations involving the four operations.

a) Find the answers to these calculations:

4 + 5 x 6 – 4 =	30 ÷ (5 x 2) =
7 x 12 ÷ 2 =	(9 – 3) + 11 =

b) Circle the calculation that would give the answer <u>18</u>:

6 + (3 x 2)	(6 + 3) x 2	6 + 3 x 2

c) Jack has 8 football cards in his pocket and 4 in his bag. He shares them equally between his two friends.

Circle the calculation that correctly shows the order of steps in this problem:

(8 + 4) ÷ 2	8 + 4 ÷ 2	8 + (4 ÷ 2)

d) Use these numbers to make the calculation correct:

3 2 9	(___ - ___) ÷ ___ = 3
5 3 8	(___ - ___) x ___ = 25

e) Olivia has 10 chocolate bars. She gives 4 to her brother, and then shares the rest between her 3 cousins.

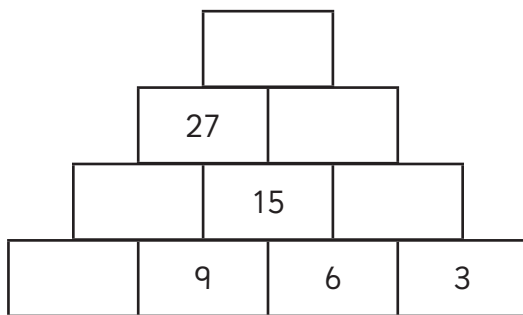Write the calculation and answer to show the order of steps in this problem:

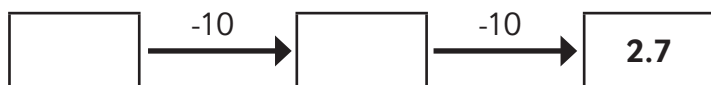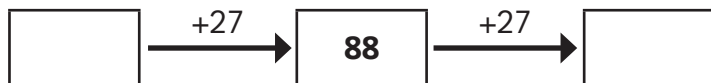..

4. Solve problems involving addition, subtraction, multiplication and division.

a) Fill in the missing information:


```
         [    ]
     [ 27 ][    ]
   [    ][ 15 ][    ]
 [    ][ 9 ][ 6 ][ 3 ]
```

b) Fill in the missing numbers:

```
[    ]  --+27-->  [ 88 ]  --+27-->  [    ]
```

```
[    ]  ---1.2-->  [ 4.9 ]  ---1.2-->  [    ]
```

```
[    ]  ---10-->  [    ]  ---10-->  [ 2.7 ]
```

c) Solve this puzzle:

I have a number.

I subtract 25.

I divide it by 3.

I add 5. The answer is 25.

What number did I start with? Show your working out:

d) Use the symbols + and – to make this calculation correct:

7 ____ 4 ____ 3 ____ 2 = 6

e) Circle three numbers that add up to 800:

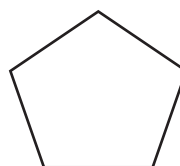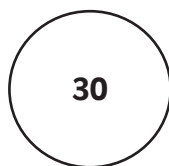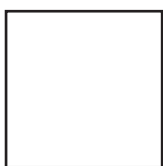| 150	200	350	250	100

f) Calculate 13.69 – 2.45

g) Write the missing numbers in the shapes:

The number in △ is <u>ten more</u> than the number in ◯

The number in △ is <u>twice</u> the number in ⬠

The number in ▢ is <u>six less</u> than the number in ⬠

30

5. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

a) A farmer <u>estimates</u> how much fencing he needs to buy to build a new fence around his field.

The field has four sides. Each side measures 52 metres.

Use rounding to estimate roughly how many metres of fencing he needs to buy.

Show the calculation you used:

b) Luca has some bags of sweets to share with his friends at his birthday party.

He has 6 bags and each bag has approximately 28 sweets in.
<u>Estimate</u> how many sweets there are in total.

c) Chloe uses rounding to <u>estimate</u> the answer to this calculation:

3.9 x 11.1 =

Which of these numbers would be a sensible estimate?

84	64	44

d) This chart shows how many loaves of bread a shop sells each day in a week.

Day	Number of loaves of bread sold
Monday	91
Tuesday	109
Wednesday	105
Thursday	95
Friday	102
Saturday	97
Sunday	106

The shop's owner uses this information to help him estimate how many loaves of bread he might sell the following week.

Estimate how many loaves of bread the shop will sell next week, to the nearest hundred.

e) Joshua is shopping with his dad. As they shop, they estimate how much they will pay for their shopping at the checkout.

Here is a list of items in their basket:

foodland

- - - - - - - - - - - - - - - - - -

pizza	£2.99
orange juice	£1.10
lettuce	£0.90
yoghurt	£0.49
milk	£1.48
tomatoes	£0.99

- - - - - - - - - - - - - - - - -

Joshua estimates that the total will be approximately £8. Joshua's dad thinks it will be £12.

Who is right?

Explain how you approached this problem:

....

....

....

....

Section 1 (Q1) : Involves the teacher reading out questions for children to calculate mentally, with no written working out.

question	script	marks	answer
1. Perform mental calculations, including with mixed operations and large numbers.			
Read these questions to the class:			
a	The distance from Joe's home to school is 3.5km. How far does he walk if he walks there and back?	1	7km
b	250 cars park in a car park on a Saturday. 175 cars park there on a Sunday. How many cars park in the car park in total over the weekend?	1	425 cars
c	Subtract 85 from 200.	1	115
d	If you buy two ice lollies that cost £1.40 each, how much change would you receive from £5.00?	1	£2.20
e	What number is fifty two more than 840?	1	892
f	What is 9.9 subtract 4?	1	5.9
g	Six biscuits cost £1.20. What is the price of four biscuits?	1	80p
h	What is the perimeter of a square, where one length measures 4.5 cm?	1	18cm
i	What is 450 add 200 add 250?	1	900
j	What is left when you take £52 away from £100?	1	£48

question	answer	marks	notes
2. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.			
a	£3.00 − 80p = £2.20 £2.20 ÷ 2 = **£1.10**	2	2 marks for a correct answer. 1 mark for an appropriate calculation, but incorrect answer.
b	60 ÷ 2 = 30 (or 60 - 30 = 30) 30 − 18 = 12 **12 children chose rock-climbing**	2	
c	Meal / Number of portions served: Jacket Potatoes 16; Spaghetti Bolognese 8; Chilli and Rice 27; Chicken Curry 19; Total 70	2	

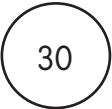| question	answer	marks	notes
d	£14 + £27 = £41 £25 + £19 = £44 £44 - £41 = **£3**	2	2 marks for a correct answer. 1 mark for an appropriate calculation, but incorrect answer.
e	£41 + £35 = £76 £76 ÷ 2 = £38 **£38 each**	2	
f	£27.64	1	

3. Use knowledge of the order of operations to carry out calculations involving the four operations.

a	4 + 5 x 6 − 4 = **30** 30 ÷ (5 x 2) = **3** 7 x 12 ÷ 2 = **42** (9 − 3) + 11 = **17**	4	
b	6 + (3 x 2) ⬭(6 + 3) x 2⬭ 6 + 3 x 2	1	
c	⬭(8 + 4) ÷ 2⬭ 8 + 4 ÷ 2 8 + (4 ÷ 2)	1	
d	3 2 9 (**9** - **3**) ÷ **2** = 3 5 3 8 (**8** - **3**) x **5** = 25	2	
e	(10 − 4) ÷ 3 = 2	1	

4. Solve problems involving addition, subtraction, multiplication and division.

a	**51** 27 **24** **12** 15 **9** **3** 9 6 3	1	
b	61 → 88 → 115 6.1 → 4.9 → 3.7 22.7 → 12.7 → 2.7	3	1 mark for each pair of correct answers.
c	25 − 5 = 20 20 x 3 = 60 60 + 25 = 85 I started with **85**	2	2 marks for a correct answer 1 mark for appropriate calculation, but in correct answer
d	7 **+** 4 **-** 3 **-** 2 = 6	1	
e	150 ⬭200⬭ ⬭350⬭ ⬭250⬭ 100	1	

question	answer	marks	notes
f	11.24	1	
g	14 40 30 20	1	

5. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

question	answer	marks	notes
a	50 x 4 = 200	2	
b	6 x 30 = 180	2	
c	84 64 (44)	1	
d	700	2	
e	Who is right? **Joshua**	3	1 mark for 'Joshua' being correct. **2 further marks for an explanation which involves rounding each price to the nearest whole pound or 50p and adding them together.**
		Total 50	