Year 4 Maths Activities

Think Academy Home Learning Study Pack

Practice Questions and Answers

Contents

Year 4 Resource Pack - Quiz 1

Warm-up round

1. 37 + 16 =

    _____

2. 112 + 29 =

    _____

3. 94 - 18 =

    _____

4. 16 x 3 =

    _____

Rounding

5. Which of these numbers is NOT equal to 370 when rounding to the nearest 10?

    Mark only one oval.

    ◯ 369
    ◯ 370
    ◯ 365
    ◯ 376

6.   Round 8674 to the nearest 100.

Mark only one oval.

◯ 9000

◯ 8670

◯ 8680

◯ 8700

7.   Which of the following options is the biggest?

Mark only one oval.

◯ 1786 rounded to the nearest 100

◯ 1984 rounded to the nearest 10

◯ 1505 rounded to the nearest 1000

◯ 840 rounded to the nearest 1000

Spotting patterns

8.   Which is the odd one out? (Hint: Spot the answer that is NOT equal to 4500)

Mark only one oval.

◯ 4500 ones

◯ 3 thousands and 15 hundreds

◯ 45 thousands

◯ 450 tens

9.   9209 – 1000 – 1000 – 1000 =

_____

10. There is a mistake in the following sequence, what number is missing? 2275, 2300, 2325, 2350, 2400, 2425...

    _____

11. Spot the mistake in the number sequence: 10, 5, 0, -5, -10, -20

    Mark only one oval.

    ◯ 10
    ◯ 0
    ◯ -10
    ◯ -20

12. Bonus Question! Andy measured the temperature in his garden on Christmas eve using his new thermometer. It was 6 degrees. On Christmas Day it started snowing, and Andy went outside to check the temperature again. He was shocked that it had dropped by 10 degrees!! What was the temperature on Christmas Day?

    Mark only one oval.

    ◯ 6 degrees
    ◯ 16 degrees
    ◯ 0 degrees
    ◯ -4 degrees
    ◯ -6 degrees

Year 4 Resource Pack - Quiz 2

Warm-up round

1. 9 x 8 =

   _____

2. 96 ÷ 12 =

   _____

3. 100 x 100 =

   Mark only one oval.

   ◯ 100
   ◯ 200
   ◯ 1000
   ◯ 10 000

Division!

> A good way to write your remainder is a little r, so 3 remainder 2 = 3 r 2

4. (21 ÷ 3) ÷ 7 =

   _____

5. (180 ÷ 18) ÷ 5 =

   _____

6. I bought a multipack containing 10 different packets of crisps. I want to share equally between myself and my two best friends. How many packets will be left over?

_____

7. 47 ÷ 6 =

_____

8. Mrs Sharp buys a big jar containing 100 sweets for her Year 4 class. They want to share them out equally and give the rest to their teacher. There are 30 children in the class. How many sweets does Mrs Sharp get?

_____

9. 1216 ÷ 4 =

   Mark only one oval.

   ⬭ 34
   ⬭ 304
   ⬭ 034
   ⬭ 340

Multiplication

10. 75 x 3 =

_____

11. 15 x 0 =

_____

6

12. 4 x 3 x 2 x 1

_____

13. 26 x 42

_____

14. Bonus Question: What is 55 squared? (Hint: Use long multiplication to calculate 55 x 55)

_____

Year 4 Resource Pack - Quiz 3

Warm-up round

1. How many millimetres are there in 1 centimetre?

   _____

2. How many centimetres are there in 1 metre?

   Mark only one oval.
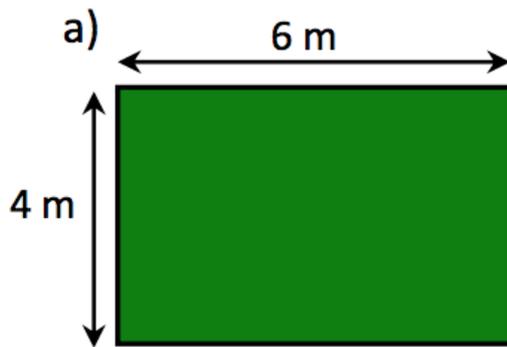
   ◯ 1
   ◯ 10
   ◯ 100
   ◯ 50

3. Nigel is 1 metre 30 centimetres tall, what is his height in millimetres? (Hint: Convert his height to cm first)
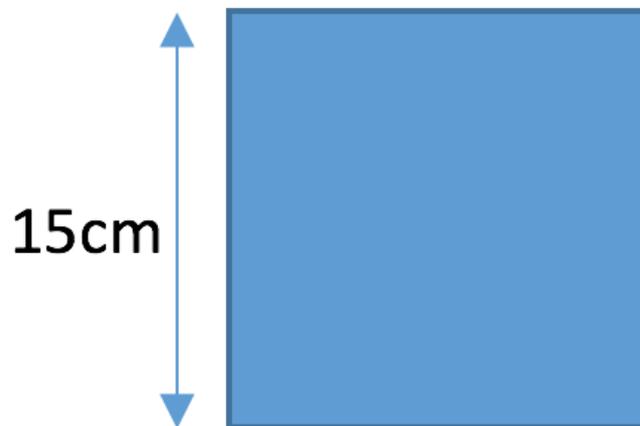
   _____

   Perimeters   Remember the perimeter is the distance all the way around the outside of a 2-D shape

4. The perimeter of a square is 32cm, how long is each side? (Remember to write the units)

   _____

5. If a garden is 6m long, and 4m wide, what is the perimeter?

a)

6 m

4 m

6. If one edge of a square is 15cm, then what is the perimeter?

15cm

9

7. A football pitch measures 26m by 12m. Jimmy arrived late to football practice and so he had to run all the way around the edge of the pitch. How far did he run?

_____

8. A side of a regular pentagon is 13 units long. What is the perimeter of the pentagon? (Hint: A pentagon has 5 sides)

_____

9. What is the perimeter of this shape? You can calculate the lengths you don't know if you're stuck.

b)

6 m

7 m

10 m

6 m

_____

10
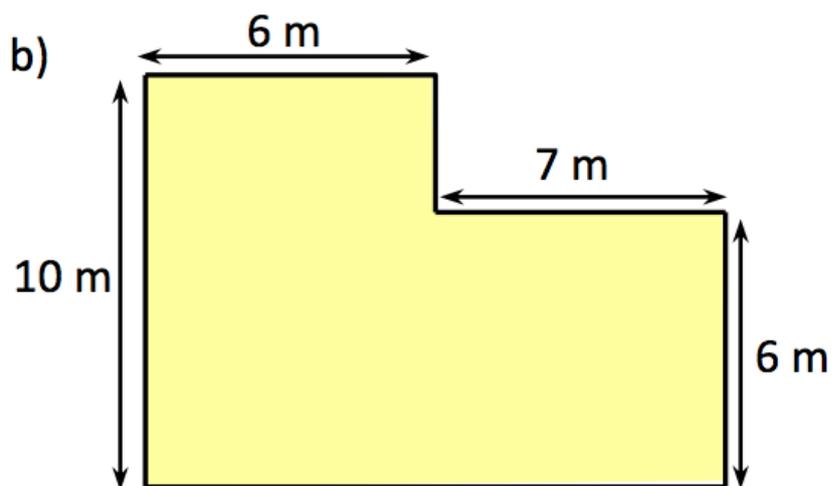
10. What is the perimeter of this isosceles triangle?
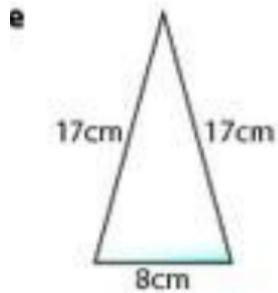
11. What is the perimeter of this shape? You can calculate the lengths you don't know if you're stuck. Dont forget the units!

11
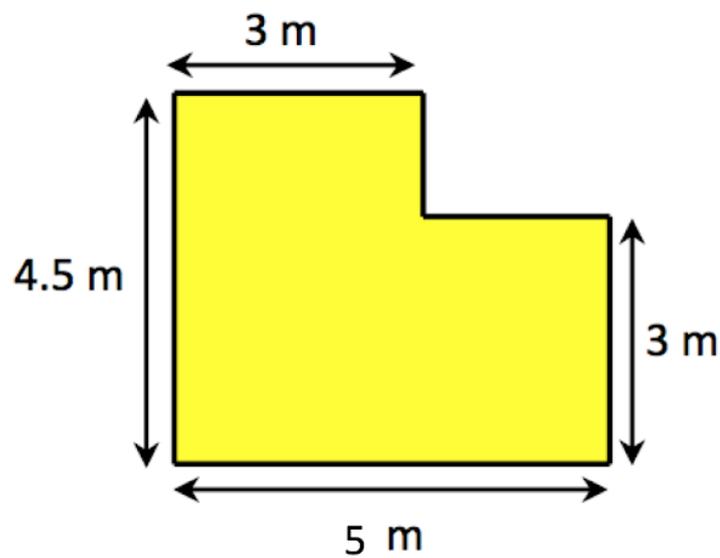
Year 4 Resource Pack - Quiz 4

Fractions

1. Which of these fractions is equal to 1 whole?

   Mark only one oval.

   ( ) 3/7

   ( ) 5/7

   ( ) 2/7

   ( ) 7/7

2. Which of these fractions are the smallest?

   Mark only one oval.

   ( ) 1/2

   ( ) 1/3

   ( ) 1/5

   ( ) 1/8

3. What is 1/2 of 28?

   _____

4. What is 1/4 of 100?

   _____

5. Fill in the blank:

$$\frac{1}{3} \text{ of } 60 = \frac{1}{4} \text{ of } \boxed{}$$

6. Fill in the blank:

$$\frac{1}{\boxed{}} \text{ of } 50 = \frac{1}{5} \text{ of } 25$$

7. Which of these fractions is NOT equivalent to 1/2?

Mark only one oval.

- ◯ 3/6
- ◯ 5/10
- ◯ 4/7
- ◯ 2/4

13

8. How do you calculate one quarter of a number?

   Mark only one oval.

   ◯ Divide by 4

   ◯ Multiply by 4

   ◯ Divide by 2

   ◯ Multiply by 2

9. 5/10 is bigger than 3/6?

   Mark only one oval.

   ◯ True

   ◯ False

10. If you share a pizza evenly between yourself and 3 friends, how much of the pizza do you eat (as a fraction)?

    Mark only one oval.

    ◯ All of it

    ◯ 1/3

    ◯ 1/4

    ◯ 1/2

11. What fraction is missing? 1/8, 2/8, __, 4/8

    Mark only one oval.

    ◯ 3/16

    ◯ 2.5/8

    ◯ 3/8

    ◯ 7/8

14

Year 4 Resource Pack - Quiz 5

Word problems

1. Peter went fishing with his Dad and caught 8 fish, his Dad is a fisherman and caught double the amount of fish that Peter caught. How many fish did they catch in total?

    _____

2. Peter and his Dad put the fish into bags that can hold 4 fish each. How many bags do they need?

    _____

3. There are 17 girls and 14 boys in Year 4. The children sit at tables of 4, how many tables are needed?

    _____

4. One table has less than 4 children sitting at it... How many children are sat on this table?

    Mark only one oval.

    ⬭ 0
    ⬭ 1
    ⬭ 2
    ⬭ 3

5. There are 17 bicycles and 12 tricycles in a shop. Each bicycle has 2 wheels, and each tricycle has 3 wheels. How many wheels are there in total?

    _____

15

6. A cricket team scored 129 runs on the first innings, and 275 runs on the second innings. How many runs did they score altogether?

_____

Money round

7. Jenny gets £5.00 pocket money each month if she keeps her bedroom tidy. How much money does she save if she cleans her room every month for a year? There are 12 months in a year.

_____

8. Jenny lives with her Mum, Dad, and 2 brothers. At Christmas, Jenny is super generous and wants to spend ALL of her pocket money on presents. She wants to spend it equally on everyone in her household. How much does she spend on each person?

_____

9. Jenny's older brother Martin gets £8.00 a month because he is older, but he is also very lazy. On 3 of the months he forgot to keep his bedroom tidy so didn't get his pocket money. How much does Martin save this year?

_____

10. Sophie has £17.36. She goes shopping and spends £2.56 on sweets, £4.85 on a new teddy bear, and £3.10 on some fluffy socks. How much money does she have left?

_____

Year 4 Resource Pack - Quiz 6

Column addition

Use column addition to solve the following questions

1. 879 + 642 =

    _____

2. 192 + 36 =

    _____

3. 887 + 778 =

    _____

4. 173 + 358 =

    _____

5. 1785 + 4468 =

    _____

Column subtraction

Use column subtraction to solve the following questions

6. 94 - 57 =

    _____

7. 168 - 59 =

    _____

17

8.   531 - 173 =

_____

9.   947 - 859 =

_____

10.   6583 - 3691

_____

Year 4 Resource Pack - Quiz 7

Long Multiplication

1. 814 x 5 =

   _____

2. 125 x 8 =

   _____

3. 75 x 75 =

   _____

4. 184 x 37 =

   _____

5. Challenge Question: 283 x 467 =

   _____

Long division

> If there is a remainder, write your answer in the form 5r3 = 5 remainder 3

6. 496 ÷ 4 =

   _____

7. 387 ÷ 5 =

   _____

19

8. $534 \div 6 =$

_____

9. $534 \div 89 =$

_____

10. Challenge Question: $684 \div 3 \div 6 =$ (Hint: Use long multiplication to divide by 3, then use it again to divide by 6

_____

Year 4 Resource Pack - Quiz 8

Spot the pattern...

Find the missing number in the sequence

1. 80, 64, 52, 44, __

   _____

2. 1, 3, 9, 27, __

   _____

3. 1, 1, 2, 3, 5, 8, 13, 21, __

   _____

4. 6666, 666.6, 66.66, 6.666, __

   _____

5. 1, 4, 2, 8, 3, 16, __ , 32

   _____

6. 9, 15, 21, 27, 33, __

   _____

7. 3, 8, 15, 24, __

   _____

8. 45, 35, 25, 15, 5, __

    _____

9. SPOT THE RULE: 128, 64, 32, 16, ...

    Mark only one oval.

    ◯ Divide by 2

    ◯ Subtract 32

    ◯ Multiply by 2

    ◯ Subtract 64

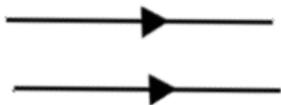10. SPOT THE RULE: 15, 18, 29, 12, 50, 33, ...

    Mark only one oval.

    ◯ Add 3

    ◯ Multiply by 2

    ◯ Add together previous two numbers in sequence

    ◯ There is no pattern!

Year 4 Resource Pack - Quiz 9

Geometry

1. Lines that never meet are called _____ lines.

   Mark only one oval.

   ◯ Straight

   ◯ Parallel

   ◯ Perpendicular

   ◯ Opposite

2. Straight lines that meet at a right angle are called _____ lines.

   Mark only one oval.

   ◯ Parallel

   ◯ Corner

   ◯ Perpendicular

   ◯ 90 degrees

3. What type of angle is this?
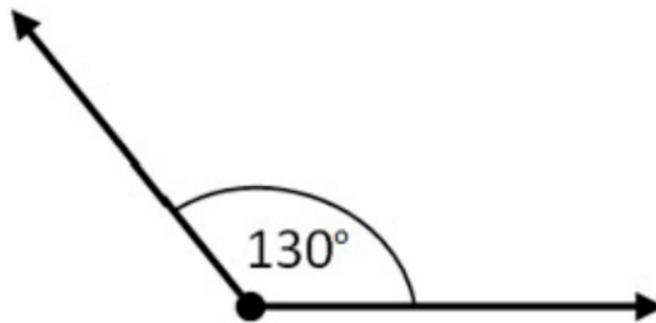
Mark only one oval.

( ) Obtuse

( ) Acute

( ) Right angle

( ) Semi circle

4. I am thinking of a shape. It has 2 pairs of parallel sides, but not all of the sides are the same length. What shape am I thinking of?

Mark only one oval.

( ) Square

( ) Rectangle

( ) Triangle

( ) Pentagon

24

5. What type of angle is this?
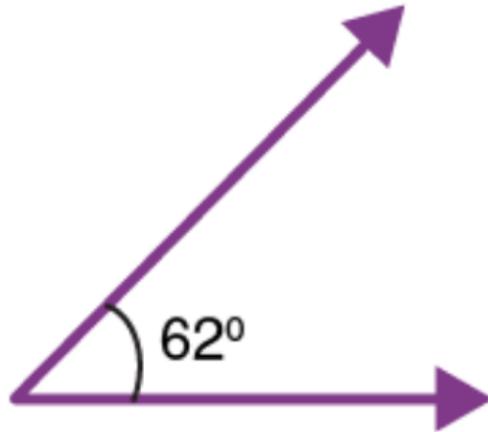
Mark only one oval.

◯ Obtuse

◯ Right angle

◯ Straight line

◯ Acute

Measurements

6. How many months are there in 4 years?

_____

7. How many grams in 0.38 kilograms?

_____

25

8. Henry is about to go to sleep, what is the time on his 24 hour clock? Give in this format hh:mm

9. How many pence are there in £12.08?

10. How many seconds are there in 10 hours?

Year 4 Resource Pack - Quiz 10

Word problems

1. The school bus is half full. If there are 32 total seats on the bus and 4 people get on, how many passengers are on the bus?

    _____

2. A cafe made 196 sandwiches for the week. On Monday they only sold 24, but on Tuesday they sold 48. If they sell 37 sandwiches on Wednesday, how many sandwiches do they have left?

    _____

3. James has £128.00 in his savings. He spends half on a new pair of shoes with flashing lights. He then spends half of what is left on a birthday present for his brother. If James spends half of his remaining savings on a new lego kit, how much does he have left?

    _____

4. Jake wants to hire a party bus for his birthday party and drive around London with his friends. The bus has 15 rows in total. The row at the back has 5 seats next to one another, and every other row has 4 seats with a gap down the middle. There is one seat at the front for the driver. How many seats are there?

    _____

5. Jake's mum and dad are coming to supervise the party, how many friends can Jake invite on the bus?

    _____

6. Jake wrote a list of every single friend he wants to invite to the party. There are 39 people on his list. How many seats will be empty?

_____

7. Delilah has a fish tank with 126 small fish inside. She needs to put in approximately 1 scoop of fish food for every 20 fish. How many scoops should she give the fish?

Mark only one oval.

- ⬭ 0-1
- ⬭ 2-3
- ⬭ 4-5
- ⬭ 6-7
- ⬭ 8-9

8. Samantha and her dad are playing pinball. Samantha scored 1534 and her dad scored 943. How many more points did Samantha score than her dad?

_____

9. Kris is trying to raise some money for charity and wants to run 120KM in one month. How many kilometres does she need to run every day? (Assume she runs the same everyday, and it is September).

_____

10. If you spend 3 minutes brushing your teeth, and brush your teeth twice a day, how long do you spend in 1 year brushing your teeth? (Hint: there are 365 days in a year). Give your answer in minutes.

_____

Solutions

Quiz 1:

1) 53
2) 141
3) 76
4) 48

These 4 warm up questions can be solved mentally or using long multiplication, and column addition and subtraction. Make sure to line the digits up in the right columns and remember to carry over the 10s.

5) 376.

When rounding to the nearest 10, you consider the ones digit. If it is 5 or greater then you must round up, and if it less than 5 you must round down. By checking all of the 4 options, 376 rounded to the nearest 10 is 380.

6) 8700. When rounding to the nearest 100, you only consider the 10s digit. Just like before, if the 10s digit is 5 or greater then you must round up to the next 100, and if it is less than 5 you must round down. Therefore 8674 rounds **up** to the next 100, which is 8700 (because the 10s digit is a 7).

7) 1505 to the nearest 1000

To solve this question, you need to work out the value of each multiple choice option by rounding, and then compare to work out which one is the biggest. 1786 to the nearest 100 is 1800, 1984 to the nearest 10 is 1980, 1505 to the nearest thousand is 2000 (because the hundreds digit is 5 or

29

greater), and 840 to the nearest thousand is 1000. Therefore, the largest of the 4 options is 1505 to the nearest 1000.

8) 45 thousands
Again you need to work out the value for each of the multiple choice options to spot the odd one out. This question tests your knowledge of place-value. 4500 ones, 3 thousands and 15 hundreds, and 450 tens are all equivalent to 4500. The odd one out is 45 thousands, which is equivalent to 45 000.

9) 6209. Subtracting 1000 3 times is the same as subtracting 3000. Be careful to line the digits up in the right column to find the answer to this question. Can be solved mentally or using column subtraction.

10)   2375. By spotting this sequence is increasing each time by   25, you can spot the mistake between 2350 and 2400 where the missing term is 2375. (2350+25 = 2375)

11)   -20. This sequence is decreasing each time by 5, so the final term should be -15, not -20.

12) -4 degrees. This word problem is asking you to calculate 6-10, which equals -4. For those struggling with calculations involving negative numbers, you are starting with 6 and taking away 10. If you take away 6 from 0, then you have 0, and still need to take away 4 more so that you have subtracted by 10.

Quiz 2:

1) 72
2) 8. Both these warm up questions can be done by mental maths.
3) 10000. To multiply by 100 you must add 2 zeros.

4) 1. Solving the brackets first, 21/3 = 7, and then 7/1 = 1

5) 2. Similarly 180/18 = 10, and then 10/5 = 2

6) 1. This word problem is asking for the remainder when dividing 10 between 3. It's important to consider yourself, and split the 10 packets evenly between 3 people. 10/3 = 3r1 so the there is 1 packet left over.

7) 7r5. This can be solved mentally by spotting 7x6 = 42 and there is 5 remaining.

8) 10. 100/30 = 3r10.

9) 304. This can be done mentally or by using long division, making sure to include the place-value holder.

10)   75 x 3 = 225. Make sure to carry over the 10, 5 x 3 = 15 so you write
the   5, and carry over 1. Then 7 x 3 = 21 and remembering to
add   the 1 gives an answer of 225.

	7	5
×		3
2	2	5

11)   15 x 0 = 0. Anything multiplied by 0 = 0. 0 lots of 1 million is 0!

12)   4 x 3 x 2 x 1 = 24. This can be solved mentally, step by step. 4 x 3 = 12, 12 x 2 = 24, 24 x 1 = 24.

13)   26 x 42 = 1092. For these long multiplication questions it may be easier to put the bigger number on the top (you will still get the right answer if not). You must line all the digits up in the right columns, and when you multiply by a 2-digit number you need to start the next line with a place value holder. This means putting 0 here to represent multiplying by 20, not 2.
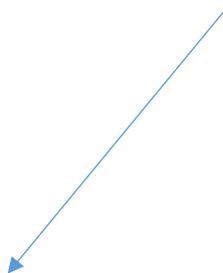
		4	2
	×	2	6
	2	5	2
	8	4	
1	0	9	2

14)   55 squared = 55 x 55 = 3025

		5	5
	×	5	5
	2	7	5
2	7	5	
3	0	2	5

Quiz 3:

1) There are 10 millimetres in 1 centimetre.

2) There are 100 centimetres in 1 metre.

3) 1300mm. 1 metre 30 centimetres is 130 centimetres and there are 10 millimetres in a centimetre so 130 x 10 = 1300.

4) 8cm. A square has 4 equal sides, and the perimeter is the total length of all the edges. If the perimeter of the square is 32cm, then the length of all 4 sides is 32, and so the length of one side is 32/4 = 8cm.

5) 20m. The formula for the perimeter of a rectangle is 2 x (length + width). This is because there are two lengths and two widths, so by adding 4+6 = 10, and then doubling, you find the perimeter is equal to 20m. This can also be found by adding up each side length, 6 + 4 + 6 + 4 = 20.

6) 60cm. Each edge of the square has equal length so the perimeter = 15cm x 4 = 60cm.

7) 76m. This word problems asks you to work out how far he ran around the edge of the pitch, this is the same as asking for the perimeter of a rectangle that measures 26mx12m. The perimeter is 2 x (26 + 12) = 2 x 38 = 76m

8) 65 units. A regular pentagon has 5 equal length sides, so if 1 side is 13 units long then the perimeter is 13 units x 5 = 65 units.

9) 46m. This 'corner-cut' rectangle has the same perimeter as a normal rectangle. By cutting off the corner, it doesn't change the perimeter. 2 x (10 + 13) = 46. If you didn't spot this, then you could have also worked out the value of the unknown side. The left side is equal to 10m, so the right side must be 10-6 = 4m. Also the bottom must be equal to 6+7 = 13. Then you can work out the perimeter by calculating 10+6+4+7+6+13 = 46m.

10)   42cm. 17+17+8 = 42cm.

11)   19m. This is another example of a corner-cut rectangle, so perimeter = 2 x (4.5 + 5) = 2 x 9.5 = 19m. Can also be done by working out the unknown sides are 1.5m and 2m.

Quiz 4:

1) 7/7

2) 1/8

3) Half of 28 is 14. 28/2

4) 25. 100/4 = 25.

5) 80. 1/3 of 60 is 20, so we need to make the right side equal to 20 too. 1/4 of _ = 20. By multiplying both sides by 4 you get the answer 80.

6) 10. This time the right side is fixed. 1/5 of 25 is 5 so we need the left side to equal 5 too. 1/ _ of 50 = 5. This is in reverse to the previous question. What fraction of 50 is equal to 5. The answer is 1/10 of 50 = 5.

7) 4/7. It is the only one that can't be reduced to ½ by diving by a common factor. For example, looking at 3/6, you can divide both sides by 3 and get ½ so they are equivalent.

8) Divide by 4.

9) False, they are both equivalent to ½ so they are the same

10) ¼. Sharing a pizza evenly between yourself and 3 friends means you divide it into 4 parts, and you each eat ¼.

11) 3/8

Quiz 5:

1) 24. Peter caught 8 fish, and his dad caught 16. In total they caught 8 + 16 fish = 24 fish.

2) 6 bags. Each bag contains 4 fish, so we need to work out how many 4s are in 24. 24/4 = 6

3) 8 tables. There are 17+14 = 31 students in total. Each table fits 4 students, so by diving 31/4 we get 7r3. This means 7 tables with 4 students, and 3 students remaining. They will need a table too so the answer is 8 tables in total.

4) 3

5) 70. The 17 bicycles have 34 wheels in total, and the 12 tricycles have 36 wheels in total. By adding these two numbers together you get the total amount of wheels = 34 + 36 = 70.

6) 404. 129+275 = 404

7) £60.00. Jenny saves £5 per month for 12 months. 5 x 12 = 60

8) £15.00. From the previous question, Jenny saved £60.00. She buys Christmas presents for her Mum, Dad and two brothers which means

£60.00/4 = £15.00 each. Be careful not to include herself and divide by 5, she doesn't buy a present for herself!

9) £72.00. Martin only gets pocket money on 9 of the months, so £8.00 x 9 = £72.00

10)   £6.85. Sophie started with £17.36. She spent in total £2.56 + £4.85 + £3.10 = £10.51. By taking that away from the amount she started with, £17.36 - £10.51 = £6.85. This can be done mentally if you are careful to carry over the 10s, or by several column addition and subtraction calculations.

Quiz 6:

Column addition

1) 879 + 642 =

carry	1	1	1
		8	7	9
+		6	4	2
	1	5	2	1

2) 192 + 36 =

carry	1		
		1	9	2
+			3	6
		2	2	8

3) 887 + 778 =

carry	1	1	1
		8	8	7
+		7	7	8
	1	6	6	5

4) 173 + 358 =

carry	1	1	
		3	5	8
+		1	7	3
		5	3	1

5)   1785 + 4468 =

carry	1	1	1	
		4	4	6	8
+		1	7	8	5
		6	2	5	3

Column subtraction:

6)   94 – 57 =

	8	14
	~~9~~	~~4~~
–	5	7
	3	7

7)   168 – 59 =

		5	18
	1	~~6~~	~~8~~
–	0	5	9
	1	0	9

39

8)

531 – 173 =

		12	
	4	2	11
	5	3	1
–	1	7	3
	3	5	8

9)

947 – 859 =

		13	
	8	3	17
	9	4	7
–	8	5	9
	0	8	8

10)

6583 – 3691

		14		
	5	4	18	
	6	5	8	3
–	3	6	9	1
	2	8	9	2

Quiz 7:
Long
multiplication

1)

814 x 5 =

			8	1	4
×					5
+		4	0	7	0
=		4	0	7	0

2)

125 x 8 =

			1	2	5
×					8
+		1	0	0	0
=		1	0	0	0

3)

75 x 75 =

				7	5
×				7	5
+			3	7	5
+		5	2	5	0
=		5	6	2	5

4)

184 x 37 =

			1	8	4
×				3	7
+		1	2	8	8
+		5	5	2	0
=		6	8	0	8

5)

283 x 467 =

				4	6	7
×				2	8	3
+			1	4	0	1
+		3	7	3	6	0
+		9	3	4	0	0
=	1	3	2	1	6	1

Long division:

6)   496 ÷ 4 =

		1	2	4
4	4	9	6	
−	4			
	0	9		
−		8		
		1	6	
	−	1	6	
			0	

7)   387 ÷ 5 =

		0	7	7
5	3	8	7	
−	0			
	3	8		
−	3	5		
		3	7	
	−	3	5	
			2	

8) $534 \div 6 =$

```
        0  8  9
   6  | 5  3  4
   -    0
        5  3
   -    4  8
           5  4
       -   5  4
              0
```

$534 \div 89 =$

9)

Whilst this looks at first like a super hard division sum, the aim was the spot from the previous question that $534 \div 6 = 89$, meaning from the inverse we know $6 \times 89 = 534$ and so $534 \div 89 = 6$.
Alternatively, they could have used trial and error and long multiplication to find the correct answer 6.

10) $684 \div 3 \div 6 =$

44

The way to solve this question is to use long division to calculate 864 ÷ 3 = 228 and then long division again to calculate 228 ÷ 6 = 38.
It is also correct if they spot that the calculation is slightly easier if they divide by 6 first.

```
      2 2 8              0 3 8
   ┌───────            ┌───────
 3 │ 6 8 4           6 │ 2 2 8
   - 6                  - 0
   ─────                ─────
     0 8                  2 2
       - 6                - 1 8
       ───                ─────
         2 4                  4 8
         - 2 4              - 4 8
         ─────              ─────
             0                  0
```

Quiz 8:

1)

80, 64, 52, 44, __ , ...

The difference between terms is -16, -12, -8, … so the difference decreases by 4 each time. The next difference should be -4, so the answer is 44-4 = 40. Essentially you needed to spot the sequence within the differences.

2)   1, 3, 9, 27, __ , ...

Each term in this sequence increases by a multiple of 3. 1 x 3 = 3, 3 x 3 = 9, 9 x 3 = 27 so the next term is 27 x 3 = 81

3)   1, 1, 2, 3, 5, 8, 13, 21, __ , ...

The next term in this sequence is found by adding together the previous two terms. $1 + 1 = 2$. $2 + 1 = 3$. $3 + 2 = 5$ etc. and so the next term is found by $13 + 21 = 34$.
This is called the Fibonacci sequence.

4)

       6666, 666.6, 66.66, 6.666, __ , ...

This sequence is decreasing each term by a factor of 10. That means that the next number in the sequence is found by dividing by 10. $6.666 \div 10 = 0.6666$

5)   1, 4, 2, 8, 3, 16, __ , 32

This sequence involves two separate sequences. The first counts up from 1, and the second starts at 4 and doubles each time. 1, **4** , 2, **8** , 3, **16** , **4**, 32

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The sequences are taking turns, or alternating, so to fill in the blank you only need to focus on the sequence counting 1, 2, 3,… to find the answer 4. This was a tricky one to spot.

6)   9, 15, 21, 27, 33, __, ...

The difference between each term in this sequence is +6. So the next term is found by $33 + 6 = 39$

7)
            3, 8, 15, 24, __ , ...

The difference between the first and second term is 5. The difference between the second and third term is 7, and the difference between the third and fourth term is 9. You must spot that the differences are increasing by 2 each time so the the next term is found by increasing by 9 + 2 to get $24 + 11 = 35$.

8)
                    • • •
            45, 35, 25, 15, 5, __

48

This sequence decreases by 10 each time. The next term in the sequence is found by 5 – 10 = -5

9)

SPOT THE RULE: 128, 64, 32, 16, ...

Divide by 2 each time. You must check the differences between more than one term otherwise by looking at 128, 64 the answer could have been to subtract 64. After noticing the next difference is 32, and then 16 you can spot the difference is decreasing by half teach time
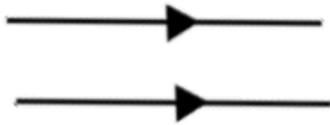
10)

SPOT THE RULE: 15, 18, 29, 12, 50, 33, ...

A bit of a trick question for this one, but there is no pattern. Students could have noticed immediately there is no connection between these numbers, or used trial and error to rule out all of the other multiple choice answers.

Quiz 9:

Geometry and measurements

1) Lines that never meet are called _____ lines?

Two straight lines that never meet are called parallel lines. This is an important definition! Students will have learnt to recognize parallel and perpendicular lines in Year 3 geometry.

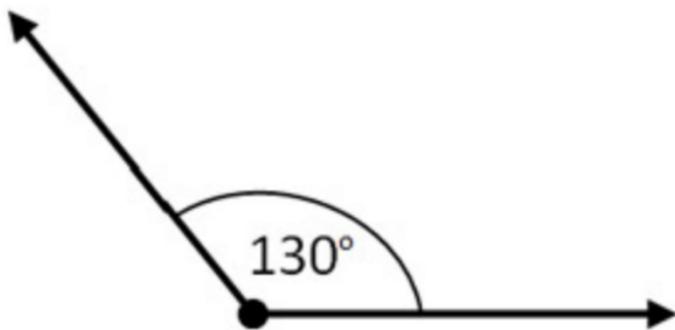2) Straight lines that meet at a right angle are called _____ lines?

Straight lines that meet at a right angle are called Perpendicular lines. They meet at an angle of 90 degrees, this is also an important definition.

3)

What type of angle is this?

Obtuse

Acute angles fall between 0 and 90 degrees. A right angle is exactly 90 degrees. An obtuse angle falls between 90 and 180 degrees. (180 degrees is a straight line). Students learn this in Year 4 geometry.

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4)

> I am thinking of a shape. It has 2 pairs of parallel sides, but not all of the sides are the same length.
> What shape am I thinking of?

A rectangle

There are several shapes that have 2 pairs of parallel sides, falling into the family of parallelograms. Because the question states not all of the sides are the same length, the answer must be rectangle which has 2 pairs of parallel sides, one pair longer than the other pair. If the pairs of parallel sides were the same length, then the shape would be a square.

5)

What type of angle is this?

Acute

6)
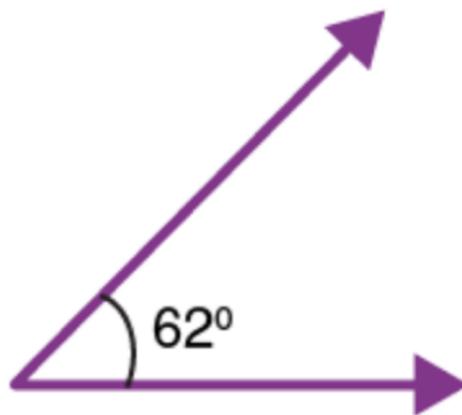
How many months are there in 4 years?

There are 12 months in 1 year. In 4 years there are 4 x 12 = 48 months

7)

How many grams in 0.38 kilograms

There are 1000 grams in 1 kilogram so in 0.38 kilograms there are 1000x0.38 grams = 380 grams

8) Henry is about to go to sleep, what is the time on his 24 hour clock? Give in this format hh:mm

53

To convert from analogue to digital time you have to add 12 hours when it's after midday. We know that it's after midday because Henry is about to go to sleep. On analogue, the time shown is 10:09, so to convert to 24-hour clock format you add 12 hours to get the answer 22:09.

Points were also given if you took the time shown as 10:10 which would be 22:10 on the 24-hour clock

9)
There are 100p in £1.00 so in £12.08 there are 12.08 x 100 = 1208 pence

10)   There are 60 seconds in 1 minute, and 60 minutes in 1 hour.
In 1 hour there are 60 x 60 = 3600 seconds.
Therefore, in 10 hours there are 3600 x 10 = 36000 seconds.

Quiz 10:
1) 20

There are 32 total seats and the bus and the bus is half full which means there are 16 people on the bus. 4 people get on which brings the number of passengers on the bus to 20.

2) 87

This can be solved using mental maths, or column addition and subtraction. The answer is found by calculating 196 – 24 – 48 – 37 = 87. Students could have used column addition to count the total number of sandwiches sold which is 24 + 48 + 37 = 109 and either mental maths or column subtraction to work out that the total sandwiches left is 196 – 109 = 87
Alternatively, they could have done 3 separate column subtractions to work out that 196 – 24 = 172, 172 – 48 = 124 and 124 – 37 = 87

3) £16.00
James starts with £128.00. After buying the shoes he has £64.00 left. After buying a birthday present for his brother he has £32.00 left. He then spent the remaining half on a Lego kit and so has £16.00 left.
Students could have also noticed that he spent half of his savings 4 times and found 1/8 of the total pot. £128/8 = £16.00

4) 62

We need to find the total number of seats on the bus. There are 15 rows, 14 of them have 4 seats so 14 x 4 = 56. The 15th row at the back has 5 seats. Including the seat at the front for the driver the total seats are 56 + 5 + 1 = 62

5) 58

From the previous question we know there are 62 seats in total. Jake will sit in 1 seat, his parents with occupy 2 seats, and the driver occupies 1, so Jake can invite a maximum of 58 friends

6) 19

From the previous question we know there are 58 available seats for his guests. If he only has 39 people to invite, there will be 19 remaining seats. This can be found by 58 – 39 = 19.

7) 6-7

There are 126 fish in total. 1 scoop of fish food is needed for approximately every 20 fish so we need to divide 126 by 20. Using long division, you can work out that 126/ 20 = 6r6 meaning you need

approximately 6 scoops for 120 fish and a little extra for the remaining 6 fish. The answer falls between 6 and 7.

8) 591
We need to find out how many more points did Samantha score than her dad; this means we need to find the difference. Students should have used column subtraction to work out that 1534 – 943 = 591

9) 4km

There are 30 days in September. Kris' target is 120km in 30 days, and we need to calculate how many kilometers she has to run each day to reach 120km. If we divide 120km by 30 we get how many kilometers she runs on each day. 120/ 30 = 4.

10)
If you brush your teeth for 3 minutes twice a day this is 6 minutes in total every day. If you did this every day for 365 days, you would spend in total 365 x 6 = 2190 minutes brushing your teeth. Long multiplication can be used to calculate the answer.