A | Answer

1. $-17 + 25 =$ 8
2. $(80 \times 5) \div (80 \div 5) =$ 25
3. Add 2×10^3 and 3×10^2.   2300
4. Change $2\frac{4}{5}$ to a percentage.   280%
5. Add $\frac{3}{8}$ of 40 to $\frac{4}{5}$ of 80.   79
6. $5 \div 0.1 =$ 50
7. $(3.5 - 3.3) \times (2.3 + 3.5) =$ 1.16
8. Approximate 4.006 to 1 decimal place.   4.0
9. Give the answer to $2 \div 7$ correct to two decimal places.   0.29
10. If $p = 1$, $q = 2$, evaluate $\frac{pq}{p^2}$.   2
11. $2m + 4 = 10$ so $m =$ 3
12. Write the next two terms of the sequence.
    1, 4, 9, 16, ____ , ____   25   36

B | Answer

1. If eight sweets cost £1 then 36 will cost   £4.50
2. How much is a 35% deposit on a £480 laptop?   £168
3. $8\frac{1}{2}$ stones =   119lb
4. 3 gallons $\div$ 6 =   4 pints
5. Which three of the following were leap years?
   1410, 1600, 1704, 1900, 1992   1600   1704   1992
6. How long does it take to travel 30km at 45km/h?   40mins
7. How many kilograms less than 1 tonne is 4 tonnes divided by 5?   200kg
8. A square was enlarged by the scale factor 2. The new square has sides of 10mm. Find the area in cm² of the original square.   0.25cm²
9. What is the number of axes of symmetry of this letter H?   2
10. Find the approximate number of days in five months.   150d

C | Answer

Below is part of the timetable of trains from York to Manchester. Note: *a* is arrive, *d* is depart.

York	d	06:25	09:13	11:15	19:48	21:48
Leeds	d	07:03	10:02	12:02	20:32	22:33
Bradford	a	07:23	10:22	12:22	20:52	22:53
Bradford	d	07:26	10:25	12:25	20:55	22:56
Halifax	d	07:37	10:36	12:36	21:07	23:08
Todmorden	d	08:00	10:59	12:59	21:29	23:30
Rochdale	d	08:14	11:14	13:14	21:45	23:46
Manchester	a	08:39	11:33	13:33	22:12	00:09

1. How many of the trains leave York in the morning?   3
2. How many of the trains arrive at Manchester between noon and midnight?   2
3. How long do trains wait in Bradford?   3min
4. At what time does the three minutes past seven train from Leeds depart from Todmorden?   08:00
5. At what time does the 9.48 p.m. train from York leave Halifax?   23:08
6. At what time does the five to nine train from Bradford depart from Rochdale?   21:45
7. What is the latest train from York that gets to Rochdale before 10.00 p.m.?   19:48
8. What is the latest train from Leeds that gets to Todmorden before 1.00 p.m.?   12:02
9. Which train from York travels the fastest to Leeds?   06:25
10. Between which two stations do trains travel for the shortest time?
    Bradford   to   Halifax
11. How many minutes does it take for the last train from York to travel to Manchester?   141min
12. What is the shortest time in hours and minutes for the whole journey?   2h   14min

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Mental Arithmetic 6 Answers

A | Answer

1. $45 \div 0.1 =$ 450
2. $(80 + 5) \div (80 \div 5) =$ 5 r 5
3. Add 1.4×10^3 and 4.1×10^2.   1810
4. If the ratio of orange juice to water is 1:5 and there are 27.5cl of water, how much juice is there?   5.5cl
5. Find the difference between 10% of 20 and 20% of 10.   0
6. $1.99 + 0.19 - 0.91 =$ 1.27
7. $\frac{3}{10} \times \frac{4}{5} =$ $\frac{6}{25}$
8. Approximate 0.003 325 to 3 decimal places.   0.003
9. Estimate to the nearest ten $\frac{555.3 + 444.8}{5.03 \times 3.99}$.   50
10. If $h = 2$, $k = 3$, evaluate $\frac{5h}{3k}$ as a mixed number. $1\frac{1}{9}$
11. $\frac{1}{a} = 2$ so $a =$ 0.5
12. Write the next two terms of the sequence.
    5, 4, 3, 2, 1, ____ , ____   0   −1

B | Answer

1. Find
   a the cost of three sandwiches at £3.75 each and   a £11.25
   b the change from £20.   b £8.75
2. How many pounds for €360 at 1.2 Euros to £1?   £300
3. 33ft 6in =   11yd   0ft   6in
4. 25yd $\div$ 10 =   2yd   1ft   6in
5. How many hours in one week?   168h
6. What is my speed if I travel $\frac{1}{3}$ mile in 2min?   10mph
7. A right-angled triangle has sides of length 6cm, 8cm, 10cm. Find its area.   24cm²
8. A rectangle with sides 4cm and 6cm was enlarged by the scale factor 3. Find the perimeter of the new rectangle.   60cm
9. What is the smallest angle through which the letter H can be turned so that it again looks like H?   180°
10. Express 250 weeks to the nearest year.   5yr

C | Answer

Caitlin is checking the times of TV programmes.

BBC1		ITV1	
8.30 a.m.	Breakfast	8.25 a.m.	Disney Club
9.30 a.m.	Politics Show	10.15 a.m.	Story Keepers
10.15 a.m.	See Hear	10.45 a.m.	Morning Worship
10.45 a.m.	Deutsch Plus	11.45 a.m.	Mozambique Link
11.00 a.m.	Chinese Art	12.00 p.m.	Moving Abroad
12.00 p.m.	Countryfile	12.30 p.m.	Newsweek
12.25 p.m.	Weather	12.55 p.m.	Regional News
12.25 p.m.	National News	1.00 p.m.	National News
12.40 p.m.	On the Record	1.10 p.m.	Politics
1.30 p.m.	EastEnders	2.00 p.m.	Emmerdale
2.55 p.m.	Clothes Show	2.55 p.m.	Coronation Street
3.20 p.m.	Property Today	3.55 p.m.	Another Galaxy
4.00 p.m.	Football Match	5.35 p.m.	Simple Dinners
6.10 p.m.	National News	6.30 p.m.	Calendar
6.25 p.m.	Weather	6.45 p.m.	National News
6.30 p.m.	Regional News	6.55 p.m.	Weather
6.35 p.m.	My Choice	7.00 p.m.	Inspector Granger
6.40 p.m.	Baking School	7.30 p.m.	Coronation Street
7.15 p.m.	WW1 Investigated	8.00 p.m.	Matchmakers

1. How many minutes does Disney Club last?   110min
2. How many minutes of National News is there on BBC1?   30min
3. What is the total amount of Regional News on ITV1?   5min
4. How long is EastEnders on BBC1?   1h   25min
5. Which ITV1 programme begins at noon?   Moving Abroad
6. What time does the football match start in 24-hour clock time?   16:00
7. How long is the longest programme on ITV1?   1h   50min
8. Which programme is the longer, Simple Dinners or Property Today, and by how much?   Simple Dinners   by   15min

Caitlin wants to record some programmes. She has 180 minutes of storage left and her television uses 24-hour clock times.

9. What time should she set the recording for the start of EastEnders?   13:30
10. How much space remains after recording EastEnders?   1h   35min
11. Is there enough space to record both EastEnders and Another Galaxy?   No
12. If Caitlin records the early showing of Coronation Street straight after recording EastEnders will there be enough space left to record the evening showing of Coronation Street as well?   Yes