

Properties of whole numbers

What number do you end up with when you follow these instructions? Write the correct answers.

These abbreviations are used for place values: M = millions, HT = hundreds of thousands, Tt = tens of thousands, T = thousands, h = hundreds, tens = tens, ones = ones.

- 1 **307 237** Swap the Tt digit with the ones digit, double the Ht digit and add 6 to the tens digit.
- 2 **4 048 361** Halve the even digits then double the odd digits. Next, swap the M digit with the h digit and subtract 3 from the tens.
- 3 **32 688** Halve the digit that appears twice. Then move the T digit into the ones place and put a 7 in the T place.
- 4 **250 000** This number is a quarter of a million. Rearrange the digits to make the number comes as close as possible to half a million.
- 5 **2 679 801** Change the M digit to the largest odd number. Swap the tens digit with the Ht digit and then swap the h digit with the Tt digit.
- 6 **8 322 467**: Make this number the smallest it can be, using the same digits.
- 7 **94 132** First subtract 1 from each digit. Then halve the even digits and double the odd digits. Finally, rearrange the digits in order with the largest digit in the Tt place and the smallest digit in the ones place.
- 8 **3 589 025** Make this number the largest it can be, using the same digits.
- 9 **4 305 126** Swap the Ht digit with the T digit, subtract 1 from the tens digit and add 3 to the Tt digit. Finally, change the M digit to the largest single-digit prime number.

- 10 **246 517**: Add 2 to every digit that is a prime number. Then swap the Tt digit with the tens digit and swap the ones digit with the Ht digit.

Score 2 points for each correct answer!

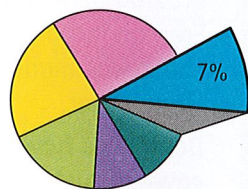


Statistics & Probability

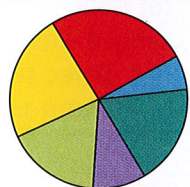
Misleading data representations

These graphs and descriptions are deliberately incorrect or misleading. Write the letter of the correct explanation beside each graph.

- 1 This pie chart shows how snakes are responsible for so many deaths!



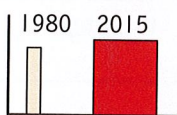
- 2 This pie chart shows how snakes kill more people than you think!



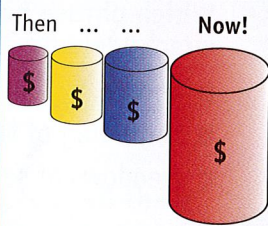
- 3 This pie chart shows how snakes killed more people over time than any other animal!



- 4 This bar graph shows how the pay of rat catchers has increased over time.



- 5 This bar graph shows how the pay of rat catchers has improved over time.



Explanations

- A The increasing 3-D perspective makes the column heights difficult to compare.
- B The use of the red 'kill' suggests that the largest red section of the graphs is for snakes. But there is no key and no labels to identify the different categories.

- C Enlarging the wedge exaggerates its value and importance. Other sections of the pie chart are actually larger.
- D The chart has no categories or values for other animals, except for the total which is much lower for snakes than it is for 'others'.
- E The greater width of the second bar and its bright colour make it difficult to see the actual difference over time.

Score 2 points for each correct answer!

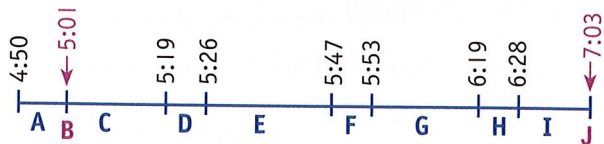


Measurement & Geometry

Using timetables.

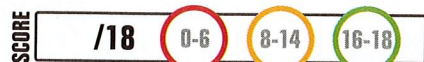
This timeline shows Hanna watching a TV show. It is not drawn to scale.

Points B and J are marked with an arrow. The other letters indicate periods of time.



- 1 During which time period was Hanna most likely waiting for the show to start?
- 2 Which point probably marks the end of the show?
- 3 How long was the longest commercial break?
- 4 How long was the shortest commercial break?
- 5 Which time period marks the longest uninterrupted time that the show was on?
- 6 Which time period marks the shortest uninterrupted period that the show was on?
- 7 How long was the show, including the commercial breaks?
- 8 How long was the show, excluding the commercial breaks?
- 9 How long was period A?

Score 2 points for each correct answer!



Problem Solving

Use this information from a TV Guide to answer the following questions.



3:10 am Movie: The Hat	4:55 am The Smiths	5:15 am Fishing Show
6:00 am Breakfast Serial	7:00 am Cartoon Time	8:30 am Baby School
9:00 am Shopping Time	9:50 am The Detectives	11:05 am Jack's Show
11:55 am Jill's Show	1:00 pm Good Cooking	1:40 pm The Doctors

- 1 Which two shows are the same length?
- 2 Which show runs for half an hour?
- 3 Which show were you watching if the time was eight o'clock in the morning?
- 4 Which is the last show of the morning?
- 5 If you wanted to watch exactly 1 hour and 25 minutes of TV, which two shows would you watch?
- 6 Which two shows combined are as long as the *Breakfast Serial* and *Cartoon Time*, combined?
- 7 Which is the shortest show?
- 8 Which show is half as long as *Cartoon Time*?
- 9 Which two shows combined are as long as *The Breakfast Serial* and *Good Cooking* combined?