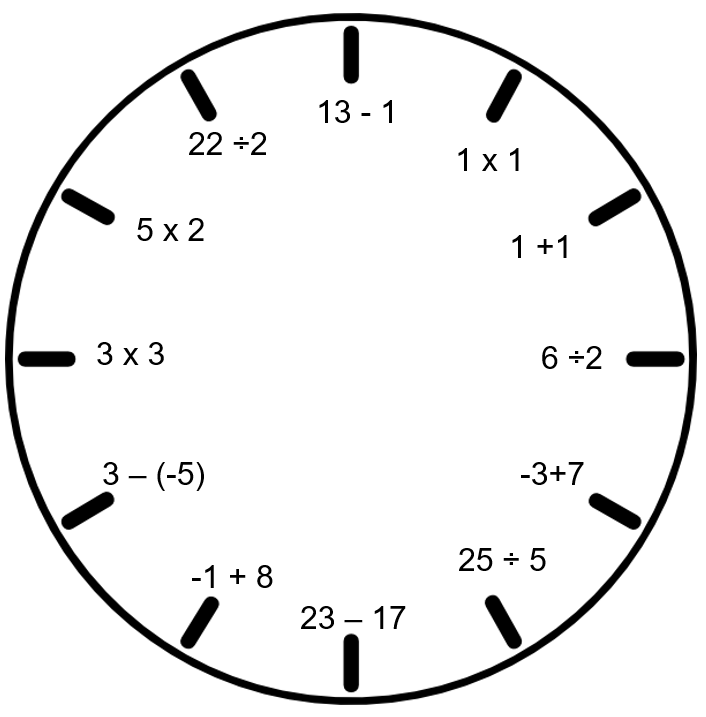
 Designing a clock

Your task



The example above shows a clock face, with each number represented by a very simple mathematical question. Each question has only one operation. Your task is to design a clock so that each number from **1** to **12** is represented by a question involving **integers,** using two or more operations. For example, **13 – 6 x 2** could be used for the number **1**.

To design the best possible clock, you should:

* Make sure your questions give the correct answer
* Use a variety of question types
* Use **at least two** operations in each question, but these should not be only **+** and **–**
* Include negative numbers in at least half of your questions
* Use each operation **+ − × ÷** at least twice throughout the task
* Include some questions that use grouping symbols **( )** effectively
* Include at least one question that uses grouping symbols *and* all four operations
* Use at least six examples where applying the order of operations correctly would affect the final answer. For example, without applying the order of operations, 13 – 6 x 2 would be equal to 14. The correct order of operations is x then – , so the correct answer is 1.

Working out space

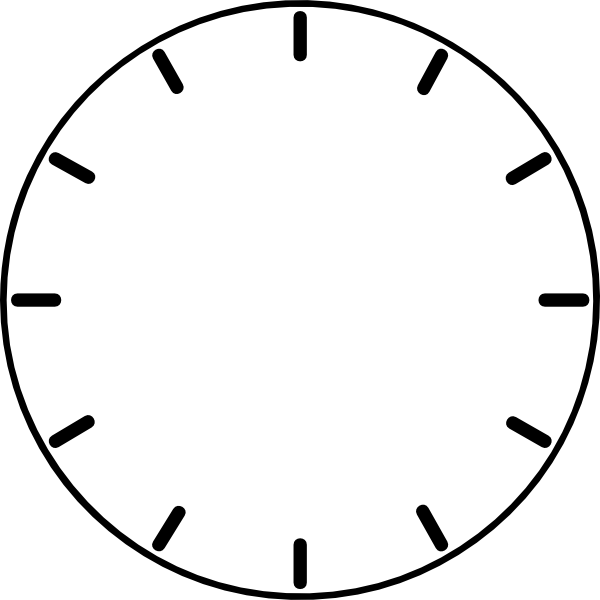
|  |  |
| --- | --- |
| **1** | **2** |
| **3** | **4** |
| **5** | **6** |
| **7** | **8** |
| **9** | **10** |
| **11** | **12** |

Student self-assessment

I have:

* checked that my questions give the correct answer
* used a variety of question types
* used two or more operations in each question, including more than just + and –
* used negative numbers in some questions
* used each operation + − × ÷ more than once
* effectively used grouping symbols ( ) in some questions
* one or more questions that use grouping symbols and all four operations
* used at least six questions where applying the order of operations correctly would affect the final answer

Final product



Outcome

Compares, orders and calculates with integers, applying a range of strategies to aid computation MA4‑4NA

Content

Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies (ACMNA183)

* apply the order of operations to mentally evaluate expressions involving integers, including where an operator is contained within the numerator or denominator of a fraction.

Student work sample

