

Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed. 7MR1.2

135. If n is any odd number, which of the following is true about $n + 1$?

- A It is an odd number.
- B It is an even number.
- C It is a prime number.
- D It is the same number as $n - 1$.

136. The table below shows the flight times from San Francisco (S.F.) to New York (N.Y.).

Leave S.F. Time	Arrive N.Y. Time
8:30 A.M.	4:50 P.M.
12:00 noon	8:25 P.M.
3:30 P.M.	11:40 P.M.
9:45 P.M.	5:50 A.M.

Which flight takes the longest?

- A The flight leaving at 8:30 A.M.
- B The flight leaving at 12:00 noon
- C The flight leaving at 3:30 P.M.
- D The flight leaving at 9:45 P.M.

137. If a is a positive number and b is a negative number, which expression is always positive?

- A $a - b$
- B $a + b$
- C $a \times b$
- D $a \div b$

138. Use the addition problems below to answer the question.

$\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$
$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} = \frac{7}{8}$
$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} = \frac{15}{16}$
$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \frac{1}{32} = \frac{31}{32}$

Based on this pattern, what is the sum of

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots + \frac{1}{1024}?$$

- A $\frac{1001}{1024}$
- B $\frac{1010}{1024}$
- C $\frac{1023}{1024}$
- D $\frac{1025}{1024}$