

4.4 Switching the order of operations (part 4)

1. If 1 chicken can lay 3 eggs in 3 days, how many eggs can 6 chickens lay in 6 days?
2. Compute: $\frac{1}{64} + \frac{1}{64} + \frac{1}{32} + \frac{1}{16} + \frac{1}{8} + \frac{1}{4} + \frac{1}{2}$ and $1+2+4+8+16+32+64+128+256+512+1024$.
3. Evaluate: $77 \cdot 77 + 123 \cdot 123$.
4. For how many (ordered) pairs of 3-digit numbers summing to 999 is no carrying required when the two integers are added?
5. Compute the sums:
 - (a) $1 + 3 + 5 + \cdots + 21$
 - (b) $1 + 3 + 5 + \cdots + 63$
 - (c) $1 + 3 + 5 + \cdots + 999$

What is common to all the answers that you get? Do you think this is a coincidence? The diagram below may be helpful in explaining your result. Do you agree?

