Text answers

Exercise 1

We have a base case: $fact(1) = 1 = 1!$. Then we know $fact(2) = 2 \cdot fact(1) = 2 \cdot 1$. Furthermore we can write: $fact(3) = 3 \cdot fact(2) \cdot fact(1) = 3 \cdot 2 \cdot 1$. Thus it is clear that we know $fact(k)$ when $fact(k-1)$ is correct.

That is:

Base case:

$fact(1) = 1 = 1!$

Inductive step:

Assume: $fact(k-1)$ is correct.

Then: $fact(k) = k \cdot fact(k-1), \quad 1 < k \leq n \quad$ *is correct.*