MATH-472: Homework 2

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Question 1

The definition of the Gamma function where $n \in \mathbb{Z}^+$ is

$$\Gamma(n) = (n-1)!$$

This can be replicated in R using the `factorial()` function.

```
posint_gamma <- function(n) {
  if (any(!is.integer(n) | n <= 0)) stop("n must be a positive integer.")

  factorial(n - 1)
}

all(posint_gamma(1:4) == gamma(1:4))
```

```
[1] TRUE
```

Question 2

Question 3

Let X be a discrete random variable with the following cdf:

X	10	30	50	70	90
$F(x) = P(X \leq x)$	0.27	0.41	0.64	0.92	1.00