# Congratulations! You passed!

**Grade received** 100%
**Latest Submission Grade** 100%
**To pass** 80% or higher

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**1.** For a variable $X \sim N(\mu, \sigma^2)$ where $\sigma^2$ is fixed and known, find the Jeffrey's prior. Is it proper? **1 / 1 point**

A- $p(\mu) \propto \sqrt{\frac{1}{\sigma^2}} \propto 1$ ; proper

B- $p(\mu) \propto \sqrt{\frac{1}{\sigma^2}} \propto 1$ ; improper

C- $p(\mu) \propto \sqrt{\frac{1}{\sigma^2}} \propto \frac{1}{\sigma^2}$ ; proper

- ○ A
- ◉ B
- ○ C

✓ **Correct**
Correct. A constant over the real line does not integrate to 1.

**2.** We are studing a Bernoulli process for which we have no prior information. We decide to use a non-informative prior such as the beta(1,1). Because the prior is flat [0,1], this prior will have no effect on the posterior. **1 / 1 point**

- ○ true
- ◉ false

**Correct**
Correct. Although, as you gather more data, the effect of the prior diminishes.

**3.** The data we are modelling comes from a geometric distribution. A good choice of prior family is: **1 / 1 point**

- ○ exponential; because there is only one parameter
- ◉ beta; because the form of the exponential matches the kernel of the beta
- ○ uniform; due to the parameter of the exponential being a proportion

**Correct**
Correct! This is the benefit of choosing conjugate priors.

**4.** Given a prior having mean 10 and data having mean 5, we should expect the posterior mean to lie **1 / 1 point**

- ○ the left of 5
- ○ to the right of 10
- ◉ between 5 and 10

**Correct**