homework4

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Homicide arrest rates in different major cities across the United States.

```
homicide_url <- paste0("https://raw.githubusercontent.com/washingtonpost/data-homicides/master/homicide-

#Load in data and tidy data
homi_data <- read_csv(homicide_url)
homi_table <- homi_data %>%
  unite(col = city_name, city, state, sep = ", ")

#Creating table with counts by city
pre_unsolved <- homi_table %>%
  select(city_name, disposition) %>%
  mutate(not_solved = disposition %in% c("Closed without arrest", "Open/No arrest")) %>%
  filter(not_solved == TRUE) %>%
  group_by(city_name) %>%
  count() %>%
  rename(total_unsolved = n) %>%
  ungroup()

pre_unsolved2 <- homi_table %>%
  select(city_name) %>%
  group_by(city_name) %>%
  count() %>%
  rename(total_homicide = n) %>%
  ungroup()

unsolved <- left_join(pre_unsolved, pre_unsolved2, by = "city_name")
```

```
#Run prop test on baltimore data
baltimore_summary <- unsolved %>%
  slice(3)
baltimore_prob <- prop.test(
  x = baltimore_summary$total_unsolved,
  n = baltimore_summary$total_homicide)
baltimore_prob
```

```
##
##  1-sample proportions test with continuity correction
##
## data:  baltimore_summary$total_unsolved out of baltimore_summary$total_homicide, null probability 0.5
## X-squared = 239.01, df = 1, p-value < 2.2e-16
## alternative hypothesis: true p is not equal to 0.5
## 95 percent confidence interval:
##  0.6275625 0.6631599
## sample estimates:
```

```
##         p
## 0.6455607
```

```
tidy(baltimore_prob)
```

```
## # A tibble: 1 x 8
##   estimate statistic  p.value parameter conf.low conf.high method
##      <dbl>     <dbl>    <dbl>     <int>    <dbl>     <dbl> <chr>
## 1    0.646      239. 6.46e-54         1    0.628     0.663 1-sam~
## # ... with 1 more variable: alternative <chr>
```

```
#Tidying data for final graph
unsolved_prop <- map2(unsolved$total_unsolved, unsolved$total_homicide, prop.test) %>%
  map_df(tidy) %>%
  select(estimate, conf.low, conf.high) %>%
  mutate(city_name = unsolved$city_name)

plot_data <- full_join(unsolved, unsolved_prop) %>%
  select(-total_homicide, -total_unsolved)
```