

Homework 4

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1

For the following confusion matrix,

```
matrix(c(30,15,10,40),
       nrow = 2,
       ncol = 2,
       dimnames = list(c('predicted positive', 'predicted negative'),
                        c('actual positive', 'actual negative')))
```

##	actual positive	actual negative
## predicted positive	30	10
## predicted negative	15	40

calculate

- Accuracy
- Sensitivity (true positive rate)
- Specificity (true negative rate)
- Positive predictive value
- Negative predictive value

2

Let

```
y_hat <- seq(.1, .7, by = .05)
y <- c(0, 0, 1, 0, 1, 1, 0, 1, 1, 0, 1, 1, 1)
```

- Plot the ROC curve.
- Find the area under the ROC curve.