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Right Triangle / Combinatorics

```
% Nolan Anderson
```

```
% ENG 101
```

```
% 1/9/2019
```

```
% MATLABR2018b
```

Assignment 1 Part 1

```
% Triangle problem
```

Given Triangle Variables

```
a = 15; %cm
```

```
c = 42; %cm
```

```
% Unknowns the following program finds:
```

```
% Side b
```

```
% Angle opposite of side b (B)
```

```
% Angle opposite of a (A)
```

Unknown Side

```
side_b = sqrt((c^2)-(a^2)) % Variation of the pythagoreom theorem
```

```
side_b =
```

```
39.2301
```

Angle B and Angle A

```
SOHCAHTOA
```

```
% To find angle A, use sine.
angle_A = asind(a/c) % a in asind is inverse, and d is degrees

% To find angle B use tangent
angle_B = atand(side_b/a) % a in atand is inverse, and d is degrees

angle_A =

    20.9248

angle_B =

    69.0752
```

Assignment 1 Part 2

```
% Factorial
% Figuring out how many 3 card combos there are in a deck of 52 cards

threecards = 1 % Initialization, multiplying by one so you're not
    getting too big of a number

for index = 50:52 % Using 'f = factorial(52)' does not work because it
    multiplies all the way down to 1

    threecards = threecards * index % Provides same answer as 52*51*50
    as last 'myanswer'

end

threecards =

    1

threecards =

    50

threecards =

    2550

threecards =

    132600
```

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