Right Triangle / Combinatorics

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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


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


myanswer =

     1


myanswer =

    50


myanswer =

        2550


myanswer =

      132600
```

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