


Value of *Course* Position

by Adam Wells, Bradley Knox, and Zach Dammel



A man in a blue polo shirt is standing on a basketball court, holding a basketball. He is looking towards the camera. A speech bubble is positioned to his left, containing a quote. The background shows the court floor and some blurred figures in the distance.

“Statistics are
not analytics.”
-Kirk Lacob

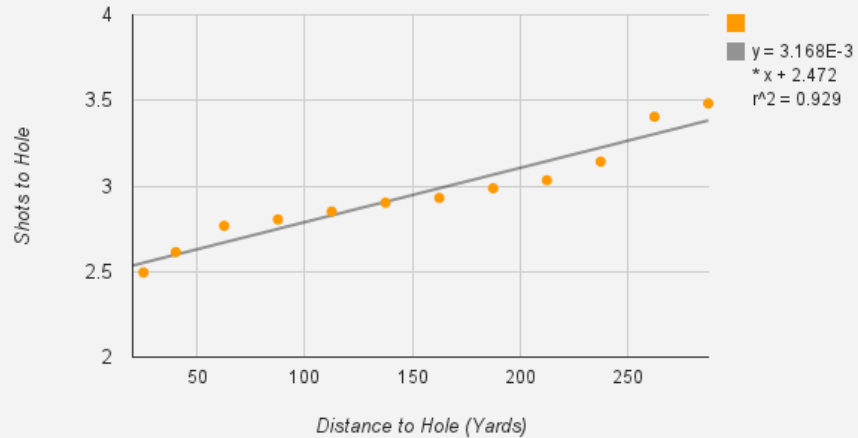
Why We Did It

Methodology (Do not attempt to read)

| | | | 16.66-20 | 13.33-16.66 | 11.66-13.33 | 10-11.66 | 8.33-10 | 6.66-8.33 | 5-6.66 | 4.33-5 | 3.66-4.33 | 3-3.66 | 2.33-3 | 1.6-2.33 | 1-1.6 | 0-1 | |
|---------|-------|--------|----------|-------------|-------------|----------|---------|-----------|--------|--------|-----------|--------|--------|----------|--------|--------|--------|
| | 30-50 | 20-30 | 50-60 | 40-50 | 35-40 | 30-35 | 25-30 | 20-25 | 15-20 | 13-15 | 11-13 | 9-11 | 7-9 | 5-7 | 3-5 | 0-3 | |
| 275-300 | | 0.4146 | 0.4233 | 0.0781 | 0.0445 | 0.013 | 0.0086 | 0.0056 | 0.0034 | 0.002 | 0.0005 | 0.0004 | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0001 |
| 250-275 | | 0.1387 | 0.5765 | 0.1537 | 0.0838 | 0.0215 | 0.0126 | 0.0069 | 0.0035 | 0.0016 | 0.0004 | 0.0003 | 0.0002 | 0.0001 | 0.0001 | 0.0001 | 0 |
| 225-250 | | 0 | 0.0948 | 0.3166 | 0.3939 | 0.1146 | 0.0542 | 0.0195 | 0.0052 | 0.001 | 0.0001 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200-225 | | 0 | 0 | 0.0005 | 0.2096 | 0.461 | 0.2828 | 0.0444 | 0.0017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200-175 | | 0 | 0 | 0 | 0.0005 | 0.0786 | 0.6029 | 0.3092 | 0.0089 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150-175 | | 0 | 0 | 0 | 0 | 0.0001 | 0.0268 | 0.4544 | 0.4856 | 0.0331 | 0.001 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125-150 | | 0 | 0 | 0 | 0 | 0 | 0.0024 | 0.1739 | 0.6538 | 0.1675 | 0.0022 | 0.0002 | 0 | 0 | 0 | 0 | 0 |
| 100-125 | | 0 | 0 | 0 | 0 | 0 | 0 | 0.0029 | 0.2869 | 0.6589 | 0.0453 | 0.0056 | 0.0003 | 0 | 0 | 0 | 0 |
| 75-100 | | 0 | 0 | 0 | 0 | 0 | 0.0001 | 0.008 | 0.1523 | 0.4995 | 0.1764 | 0.1027 | 0.0434 | 0.0139 | 0.0033 | 0.0004 | 0.0001 |
| 50-75 | | 0 | 0 | 0 | 0.0001 | 0.0016 | 0.0145 | 0.0743 | 0.2057 | 0.3071 | 0.117 | 0.0971 | 0.0718 | 0.0495 | 0.0322 | 0.0145 | 0.0107 |
| 30-50 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0051 | 0.0608 | 0.2619 | 0.3976 | 0.2261 | 0.046 | 0.0024 | 0.0001 |
| 20-30 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0002 | 0.0153 | 0.213 | 0.5268 | 0.2326 | 0.0119 | 0.0002 |
| 275-300 | | 0.8787 | 0.1037 | 0.0014 | 0.0002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 250-275 | | 0.4362 | 0.3932 | 0.0754 | 0.0454 | 0.0141 | 0.0098 | 0.0066 | 0.0043 | 0.0027 | 0.0008 | 0.0006 | 0.0005 | 0.0004 | 0.0003 | 0.0002 | 0.0003 |
| 225-250 | | 0.1917 | 0.5478 | 0.1348 | 0.0763 | 0.0209 | 0.0129 | 0.0075 | 0.0041 | 0.0021 | 0.0005 | 0.0004 | 0.0003 | 0.0002 | 0.0002 | 0.0001 | 0.0001 |
| 200-225 | | 0.1104 | 0.4876 | 0.1723 | 0.1204 | 0.0393 | 0.0273 | 0.018 | 0.0111 | 0.0065 | 0.0017 | 0.0013 | 0.001 | 0.0008 | 0.0006 | 0.0004 | 0.0005 |
| 200-175 | | 0.0174 | 0.4647 | 0.2584 | 0.1682 | 0.0446 | 0.025 | 0.0127 | 0.0056 | 0.0022 | 0.0004 | 0.0003 | 0.0002 | 0.0001 | 0.0001 | 0 | 0 |
| 150-175 | | 0 | 0.0731 | 0.2387 | 0.3686 | 0.1486 | 0.0945 | 0.0485 | 0.0197 | 0.0064 | 0.001 | 0.0005 | 0.0003 | 0.0001 | 0.0001 | 0 | 0 |
| 125-150 | | 0 | 0.0027 | 0.0586 | 0.3182 | 0.2437 | 0.2009 | 0.1156 | 0.0455 | 0.0123 | 0.0015 | 0.0007 | 0.0003 | 0.0001 | 0.0001 | 0 | 0 |
| 100-125 | | 0 | 0.0017 | 0.0029 | 0.1825 | 0.1842 | 0.2095 | 0.1827 | 0.1198 | 0.0592 | 0.0121 | 0.0077 | 0.0047 | 0.0028 | 0.0016 | 0.0008 | 0.0005 |
| 75-100 | | 0 | 0.0003 | 0.006 | 0.0583 | 0.0877 | 0.1428 | 0.1859 | 0.1902 | 0.1529 | 0.0462 | 0.0371 | 0.0282 | 0.0213 | 0.0163 | 0.0092 | 0.0094 |
| 50-75 | | 0 | 0.0002 | 0.0053 | 0.0553 | 0.0824 | 0.1372 | 0.1829 | 0.1916 | 0.1578 | 0.0486 | 0.0393 | 0.0303 | 0.0231 | 0.0179 | 0.0102 | 0.0105 |
| 30-50 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0051 | 0.0608 | 0.2619 | 0.3976 | 0.2261 | 0.046 | 0.0024 | 0.0001 |
| 20-30 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0002 | 0.0153 | 0.213 | 0.5268 | 0.2326 | 0.0119 | 0.0002 |

Fairway

Yards to Hole (Fairway: 20-300 yards) vs Shots to Hole



Green

Putting



Putting

30 ft



25 ft



10 ft

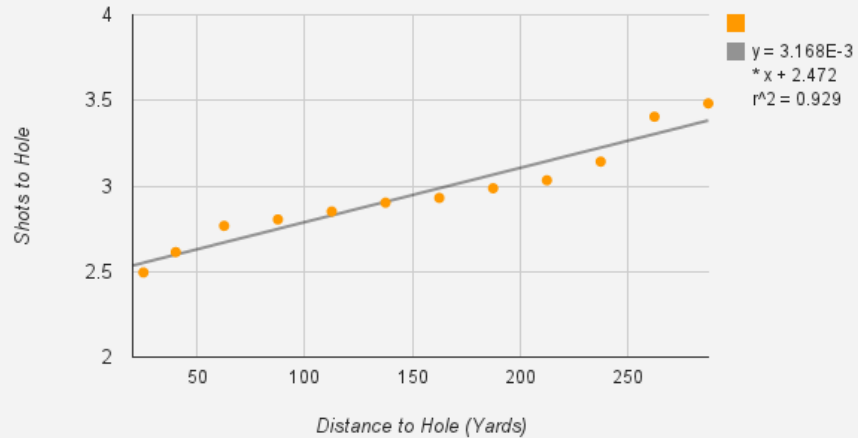


5 ft



Fairway

Yards to Hole (Fairway: 20-300 yards) vs Shots to Hole



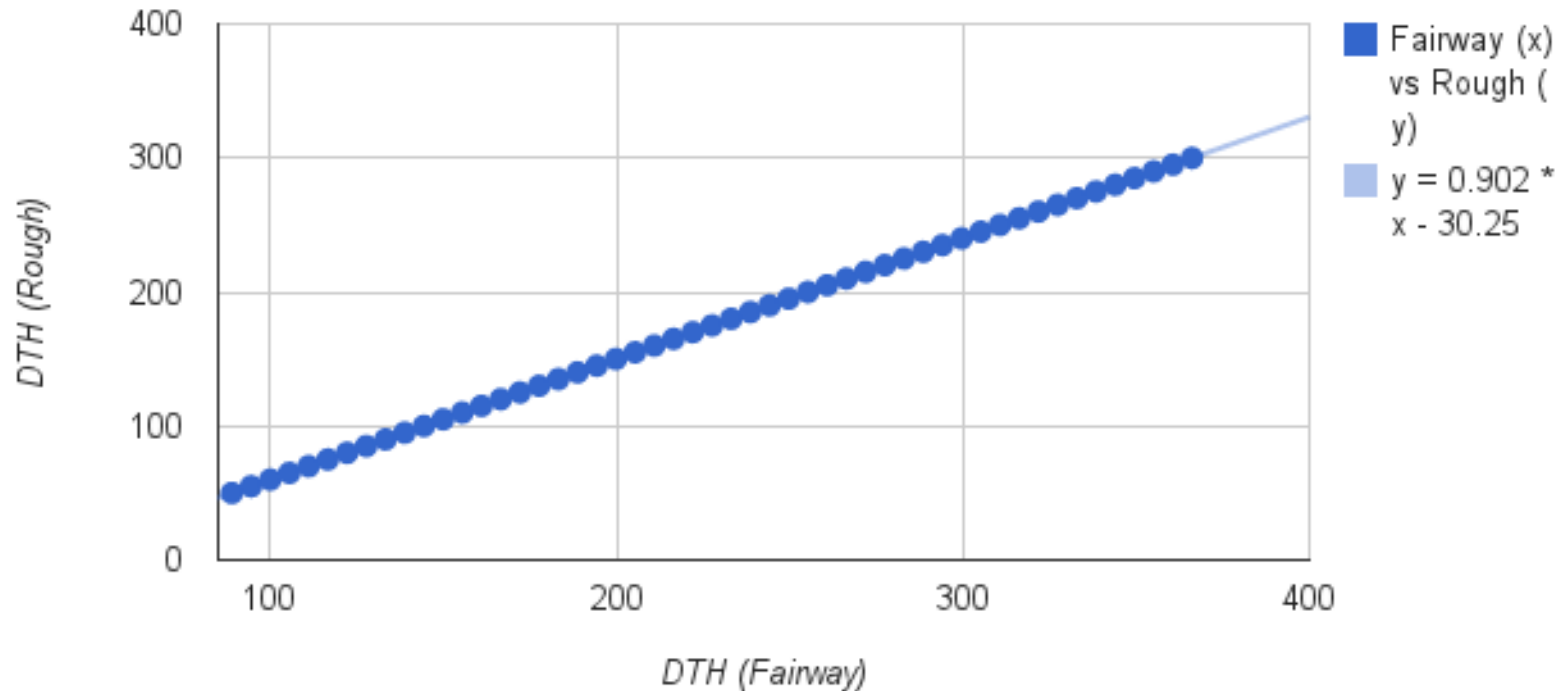
Green

Putting

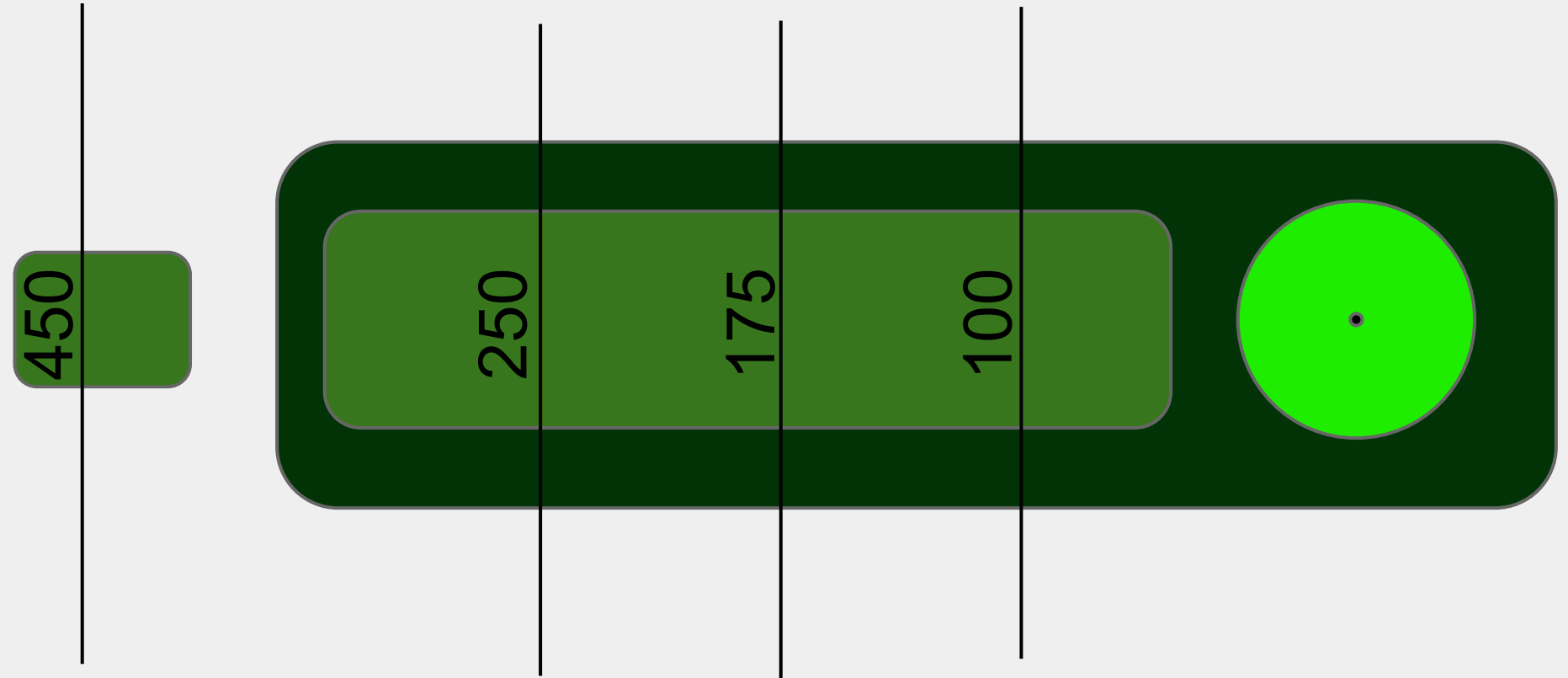


Fairway vs. Rough

How Much Farther on Rough?



Fairway vs. Rough



Value of Driving Accuracy and Distance

$$E(S) = \alpha[(L-D)(.00372) + 2.6] \\ + (1-\alpha)[(L-D)(.003042) + 2.498]$$

L = Length of hole (assumed to be 450 yards for next example)

D = Driving distance

α = Driving accuracy

Ex: John Daly vs. Zach Johnson



John Daly:

Average Driving Distance: 297 yards

Fairway Accuracy: 46%

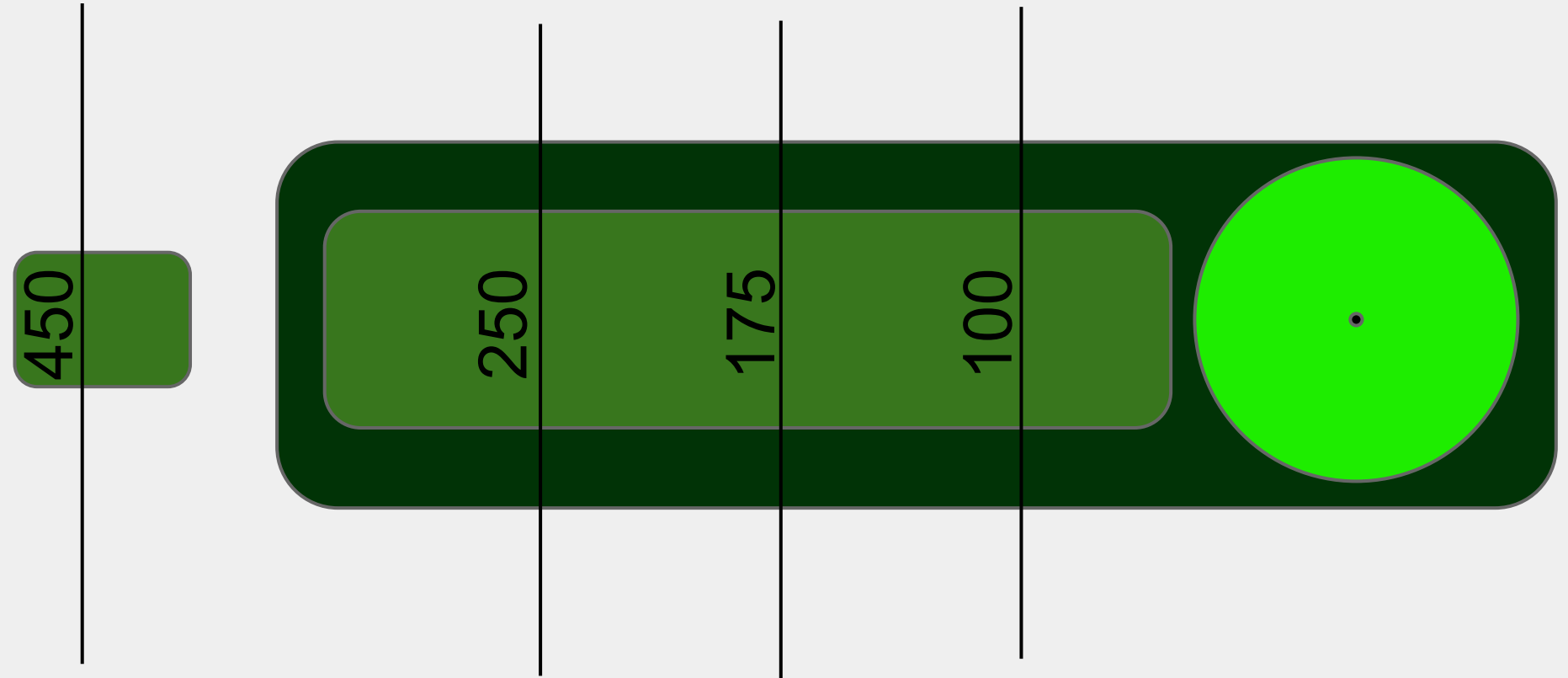


Zach Johnson:

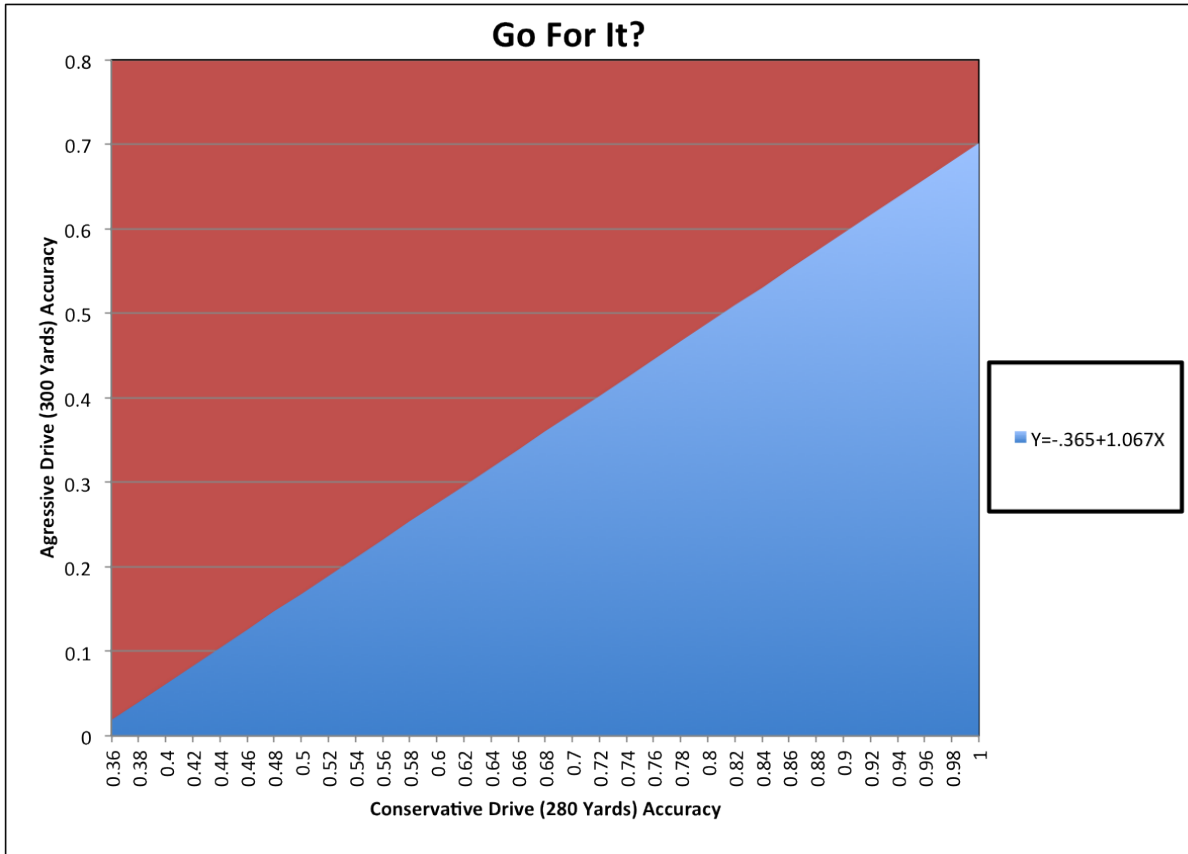
Average Driving Distance: 273.8 yards

Fairway Accuracy: 85%

Ex: John Daly vs. Zach Johnson



Driving Accuracy vs Distance



Two Options on the Drive:

- (1) Conservative (280 yards, 3-wood, higher fairway percentage)
- (2) Aggressive (300 yards, driver, lower fairway percentage)

Which is Better?



**Where do we
go from here?**