1. Another correct answer would be B.

3. C is correct!
Coefficient of determination → r^2

Just C

5. NOT B

C & D are correct

7. r^2 is the ~~coeff~~ coefficient of determination that tells us how much of the error can be explained by the linear regression model. In other words: $\frac{SS_{mod}}{SS_{tot}} = \frac{SS_{mod}}{SS_{mod} + SS_E}$

With an r^2 value of 0.06, we can say 6% of the error found in the response variable is explained by our model. The remaining error is with the variance from the explanatory variable. So, we know the SS_{mod} is less than that of the SS_E!

8a) Normality? Based on the probability plot, I believe this model is not ~~approximating~~ approximately Normal. Instead, we can use a standardized distribution allowing for more extreme values.
Constant Variance? No funnelling or pattern on the residuals plot
~~Fitted~~ ~~Zero Mean~~: similar # of points below & above line
~~Independence~~: zero mean
Linearity: random pattern in residual plot

Independence & randomness are situation based, and we need more information about the process used to collect the data.

9a) 30.84 calories burned

9c) ~~I could make a confidence interval looking at the average runners and finding an interval representing~~ 95%

~~average~~

9c) I could make a 95% confidence attempting to capture the true average # of calories burned every increase in mph. Then I would look to see if the specific runners value falls within that interval

9d. R^2: 39.8% of the error can be explained by the model.

The f statistic compares the combined effect of the variable
Along with a large f-value and a p-value that is less than our α level, we can reject the null hypothesis- that would say there's no relationship between increase in speed & the number of calories burned.