

MATHCOUNTS® Problem of the Week Archive

Are You Ready For Some Football?! – September 14, 2015

Problems

Last season, the New Orleans Saints' quarterback, Drew Brees, finished the football season with 456 completed passes out of 659 attempted passes. He had a total of 4952 passing yards, throwing 33 touchdown passes and 17 interceptions. What was his average number of passing yards per completed pass last season? Express your answer as a decimal to the nearest tenth.

The NFL uses a statistic called the passer rating as one way to measure a quarterback's performance. The formula to calculate a quarterback's passer rating is as follows:

$$\text{Passer Rating} = \left(\frac{a + b + c + d}{6} \right) \times 100$$

$$a = \left(\frac{\text{COMP}}{\text{ATT}} - 0.3 \right) \times 5$$

$$b = \left(\frac{\text{YDS}}{\text{ATT}} - 3 \right) \times 0.25$$

$$c = \left(\frac{\text{TD}}{\text{ATT}} \right) \times 20$$

$$d = 2.375 - \left(\frac{\text{INT}}{\text{ATT}} \times 25 \right)$$

ATT = number of attempted passes

$COMP$ = number of completed passes

YDS = total passing yards

TD = number of touchdown passes

INT = number of interceptions

Using the stats from the previous problem, what was Drew Brees' passer rating at the end of the 2014 season? Express your answer as a decimal to the nearest tenth.

Drew Brees finished the 2013 football season with a passer rating of 104.7. To finish the 2014 football season with a passer rating greater than 104.7, what is the minimum number of passing yards Drew Brees would have needed beyond his 4952 passing yards in 2014? Express your answer to the nearest whole number.