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RATIOS & RATES

EXTENDED LEARNING

1. In a Houston Texans game against the Seattle Seahawks, the Texans successfully converted 3 of their 13 third downs to a first down or a scoring play. Use this information to complete the following sentence.

The ratio of successful conversions to unsuccessful conversions is _____, so the number of successful conversions is _____ the number of unsuccessful conversions.

3:10, less than

2. The Houston Texans players study their playbooks each week to prepare for gameday. The Texans running back can learn 3 new plays in 10 minutes. If he continues at this rate, how long would it take him to learn 120 plays?

$$\frac{3 \text{ plays}}{10 \text{ minutes}} = \frac{120 \text{ plays}}{x \text{ minutes}}$$

$\overset{\text{x40}}{\curvearrowright}$ $\underset{\text{x40}}{\curvearrowleft}$

$X = 400 \text{ minutes}$
 or
 6 hours 40 minutes

3. The Houston Texans mascot TORO takes the field before each home game and throws red t-shirts and blue t-shirts to fans in the crowd. He starts with 24 t-shirts in his backpack. The ratio of red t-shirts to blue t-shirts is 2:1. Before going out TORO decides to add 12 more blue t-shirts to his backpack. What is the new ratio of red t-shirts to blue t-shirts?

Original	$\frac{2 \text{ red}}{1 \text{ blue}}$	$\frac{24}{\boxed{8 \quad 8 \quad 8}}$ red red red	$\frac{16 \text{ red}}{8 \text{ blue}}$
New	$\frac{16 \text{ red}}{8+12 \text{ blue}}$	$= \frac{16 \text{ red}}{20 \text{ blue}}$	$= \frac{4 \text{ red}}{5 \text{ blue}} = 4:5$



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ENRICHMENT

Look at the Final Individual Statistics on one of the Stats Reports. It includes statistics on how the quarterbacks from both teams performed in the game. Write ratios comparing the number of passes attempted, the number of completions, the number of interceptions, and the number of yards gained for each player. Use these ratios to determine who you think had the better game.

TERMINOLOGY

Third-down Conversion - Each possession, a team has four opportunities to score or gain 10 yards. The third of four opportunities is an offensive drive to gain the number of yards necessary to either score, or retain possession of the ball. If successful, (other than a scoring play), the offense “converts” that 3rd down onto a first down, new set of downs, or opportunities to score.

COMPLETION

Completion - A completion is when a receiver successfully catches a pass thrown by the quarterback. An interception happens when a member of the defensive team catches a ball thrown by the quarterback instead of the intended receiver. This results in a turnover and the defense gets the ball.