Stat Star questions 2014
WITH ANSWERS INCLUDED

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It will probably be useful to download the document Useful Baseball Info from the website www.uccs.edu/pipes/educator-programs/sky-sox-math-day.html in order to provide you with some important information which will help you answer these questions.

1) The grass field at Security Service Field is completely new this year! (Beautiful, isn't it?) 100,000 square feet of new grass was installed over the winter. The new grass came in sod rolls. Each sod roll was 4 feet wide and 80 feet long. (These rolls are huge!) Approximately how many sod rolls were needed to complete the job?

Approximately 313 rolls

2) A baseball diamond is a square. The distance from each base (or home plate) to the next base (or home plate) is 90 feet. How far is it from home plate to second base?

Approximately 127.3 feet (= 90\sqrt{2} feet)

3) While we're on the subject of the distance from home plate to second base … During Spring Training (which lasts about six weeks), Sky Sox catcher Matt McBride practiced throwing from home plate to second base (in order to practice throwing out would-be base stealers). He made 1,000 of these practice throws during Spring Training 2014. All together, how many miles did he throw during Spring Training?

Approximately 24.1 miles

4) The Warning Track is the dirt area which separates the grass field from the outfield wall (and from the stands as well). The shape of the outfield section of the Warning Track is (approximately) a portion of a circle, where the circle has radius 380 feet. If a player wants to run at least two miles during his warmups, how many 'round trip pole-to-poles' would he need to run? (A 'round trip pole-to-pole' means he runs along the Warning Track from the right field foul pole to the left field foul pole, and then runs back.)

9 round trip pole-to-poles

5) Total attendance at Sky Sox home games in 2012 was 334,245; the Sky Sox played 68 home dates in 2012. Total attendance at Sky Sox home games in 2013 was 326,274; the Sky sox played 63 home dates in 2013. (There were some rainouts in 2013.) In which of the two years was the average per game attendance higher? How many more fans (on average) came to each of the Sky Sox games in the higher-average year compared to the lower-average year?

Approximately 264 more fans on average per game in 2013 as compared to 2012
6) If Coty Woods pitches 160 innings this season, and he allows 80 earned runs, what would his Earned Run Average be?

4.50

7) While we're on the subject of Earned Run Average … suppose that by the 2014 AAA All Star Break (July 16), Coty Woods has already pitched 160 innings, and during that time has allowed 80 earned runs. How many shutout innings would Coty Woods need to pitch from the All Star Break through the end of the season in order that his Earned Run Average for the season ends up below 3.50?

46 shutout innings

8) The Sky Sox will play 25 games in the month of May (including two Math Youth Days!). The Sky Sox use an average of 30 baseballs per game. If a case of baseballs contains 24 balls, how many cases of baseballs will the Sky Sox need to buy from their baseball supplier in order to have enough baseballs to use in May?

32 cases

9) While we're on the subject of the number of baseballs used in a game … 88 inches of red thread stitching is required to produce each baseball. How many feet of stitching will go into making all of the baseballs that the Sky Sox will use in May?

5,500 feet

10) Ben Paulsen is the runner at first base while Tim Wheeler is at bat. On six consecutive pitches, Paulsen tries to steal second. But on each pitch, Wheeler hits the ball foul. On each of these six pitches, Paulsen runs 2/3nds of the way to second base, then runs back to first. How far does Paulsen run while Wheeler was fouling off pitches?

720 feet