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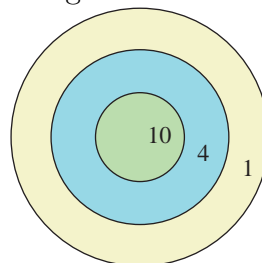
**Problem 5.** Express in terms of the fewest number of square roots possible:

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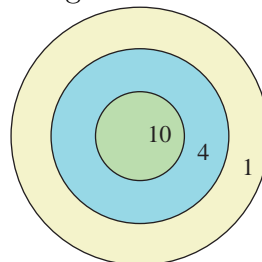
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**Problem 6.** A dartboard consists of three concentric circles of radius  $2''$ ,  $4''$ , and  $6''$ , and points are assigned as indicated when a dart lands in the various regions. If Zach throws many, many darts at the dartboard, never misses the board and is equally likely to hit any point in the board, what is his long-term average score?



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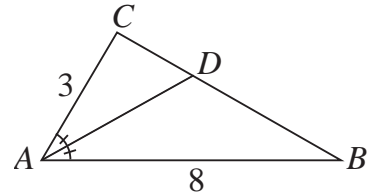
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**Problem 8.** Box A contains 2 red marbles and 1 black marble. Box B contains 3 red marbles and 2 green marbles. Stephanie selects a box at random and then chooses a marble from it at random. If she picks a red marble, what is the probability that she selected Box B?

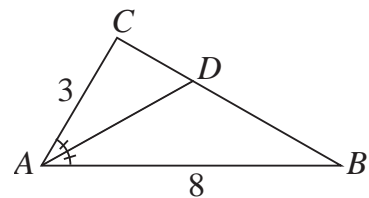
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**Problem 10.** What is the smallest positive integer  $N$  whose *reciprocal* has a decimal expansion that repeats after every 4 digits and no sooner? (For example,  $1/7 = 0.\overline{142857} \dots$  has a decimal expansion that repeats after every 6 digits.)

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