

# The Weekly Daf



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Week of 22-28 Iyar 5758 / 18-24 May 1998

Eiruv 14 - 20

Rav Weinbach's insights, explanations and comments for the 7 pages of Talmud studied in the course of the worldwide Daf Yomi cycle

## "PI" in the Sky

An interesting mathematical problem arises in regard to a formula put forth in our mishna. A korah crossbeam placed across the entrance to a mavoi must be a tefach wide. If this beam is circular, we view it as if it were rectangular and all of it the width of its diameter. In order to have a diameter of a tefach, concludes the mishna, a circle must have a circumference of three tefachim.

Tosefos raises the question that the three to one ratio for circumference to diameter is not exact according to the mathematicians, and offers no resolution. The mathematics to which Tosefos refers is discussed by Rambam in his commentary on the mishna. He states that there is no whole number or even whole fraction to express the ratio of circumference to diameter, but that mathematicians rely on an approximation of  $3 \frac{1}{7}:1$  (what we commonly refer to as pi). He concludes with the explanation that since there is no whole number to use (as students of math will recall in regard to the infinite fractioning that goes on beyond 3.14), the Sages instructed us to use the nearest whole number which results in a ratio of 3:1.

Although this means that a circle with a circumference of three tefachim will in reality have a diameter of only about 0.95 and not the full one tefach required in a rectangular situation, the commentaries on Rambam point out that since the korah and its dimensions are of rabbinic origin, the Sages allowed for this slight discrepancy in the case of a round korah.

Aruch Hashulchan (Orach Chaim 363:22) goes even farther. He reads this mathematical mystery into the words of our gemara. Our gemara asks what the source is for the 3:1 ratio mentioned in the mishna, and answers by citing a passage (Melachim I 7:23) which describes the dimensions of the pool built by King Solomon for the Beis Hamikdash as a diameter of ten amos and a circumference of thirty. Why does the gemara need to ask for the source of a mathematical formula when we can simply ascertain it through our own measurement? This question, suggests the Aruch Hashulchan, was not regarding the source, but rather constituted a challenge to the correctness of the ratio which should really be  $3 \frac{1}{7}:1$ . The gemara's answer is that since the passage insists on describing Solomon's circular pool with a ratio of 3:1 although this was not the reality, it is a signal for us to employ this ratio in regard to all halachic matters where the diameter must be calculated from the circumference. Even though the diameter is actually smaller, this is the measurement which the halacha requires in cases of circles.

(As a final footnote we refer both the curious novice and the serious scholar to examine the words of Tiferes Yisrael (footnote 27) in his commentary on the ratio stated in the mishna. Through some apparent printing error the ratio there described is  $3:1 \frac{1}{7}$  rather than  $3 \frac{1}{7}:1$  and the conclusion of the discrepancy resulting in a more stringent requirement leaves the reader baffled!).

Eruvin 14a

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# The Perimeters of Praise

When one praises another not in his presence, says Rabbi Yirmiyahu ben Elazar, he may praise him in full. But in his presence, he should express only a portion of the praise due him.

The source for this rule is the difference between two of Hashem's descriptions of Noach's righteousness. In Bereishis 6:9 Noach is described as a "perfect tzadik" while in 7:1 he is described as only "a tzadik." In the first instance the praise of Noach was expressed in his absence and was therefore complete, while in the second case it was addressed to him and therefore had to be limited.

Rashi explains that exuberant praise in the presence of even a deserving person gives the impression of being flattery for the purpose of finding favor, a behavior which is severely criticized in Scripture and in Talmud when it is applied to an undeserving person.

Maharsha suggests that the problem with full praise in the presence of the subject is that it may lead to an inflation of his ego. This approach is indeed proposed by one of the commentaries on Midrash Rabbah. The shortcoming of this approach, he points out, is that it cannot be applied to an extension of our gemara which appears in the Midrash (Bereishis Rabbah 32:3), as follows:

The Midrash states that even in praising Hashem we find a difference in the extent of our praise whether we are addressing Him directly or speaking of Him in third person. King David tells us (Tehillim 66:3) "Song to the L-rd: How awesome are Your deeds" which prescribes a partial praise of Divine power which fails to include a tribute to His kindness. But when we speak of Hashem in third person, which in human terms is equivalent to not being in the presence of the subject, we are told (Tehillim 136:1) "Praise Hashem for He is good and His kindness is eternal."

Rashi's approach, concludes Maharsha, applies even to praise of Hashem, because of the impression it can create of flattery. The alternative approach of concern for the ego of the praised one is inapplicable to Hashem and must therefore be abandoned in favor of Rashi's explanation.

*Eiruv 18b*

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