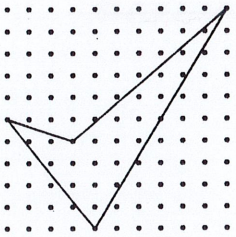
AMC 8 (2004) Sampler for Discussion

Name _____

9. The average of the five numbers in a list is 54. The average of the first two numbers is 48. What is the average of the last three numbers?

(A) 55 **(B)** 56 **(C)** 57 **(D)** 58 **(E)** 59

14. What is the area enclosed by the geoboard quadrilateral below?

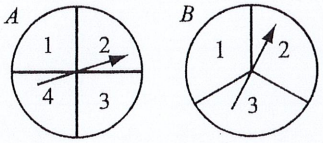


(A) 15 **(B)** $18\frac{1}{2}$ **(C)** $22\frac{1}{2}$ **(D)** 27 **(E)** 41

19. A whole number larger than 2 leaves a remainder of 2 when divided by each of the numbers 3, 4, 5 and 6. The smallest such number lies between which two numbers?

(A) 40 and 49 **(B)** 60 and 79 **(C)** 100 and 129 **(D)** 210 and 249 **(E)** 320 and 369

21. Spinners A and B are spun. On each spinner, the arrow is equally likely to land on each number. What is the probability that the product of the two spinners' numbers is even?



(A) $\frac{1}{4}$ **(B)** $\frac{1}{3}$ **(C)** $\frac{1}{2}$ **(D)** $\frac{2}{3}$ **(E)** $\frac{3}{4}$

24. In the multiplication problem below, A, B, C and D are different digits. What is $A + B$?

$$\begin{array}{r} ABA \\ \times\ \ CD \\ \hline CDCD \end{array}$$

(A) 1 **(B)** 2 **(C)** 3 **(D)** 4 **(E)** 9

AMC 8 (2004) Sampler for Discussion

Name Boyd's Work

9. The average of the five numbers in a list is 54. The average of the first two numbers is 48. What is the average of the last three numbers?

(A) 55 (B) 56 (C) 57 (D) 58 (E) 59

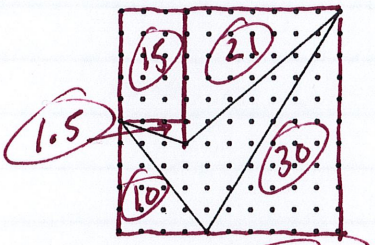
Tip: Often easier to focus on "Total" needed rather than Avg needed.

$5(54) = 270$

$2(48) = -96$

$174 \div 3 = 58$

14. What is the area enclosed by the geoboard quadrilateral below?



(A) 15 (B) $18\frac{1}{2}$ (C) $22\frac{1}{2}$ (D) 27 (E) 41

Tip: Decide on additive or subtractive approach to complex area problems. I used subtractive here.

$100 - (15+21+30+10+1.5) = 22.5$

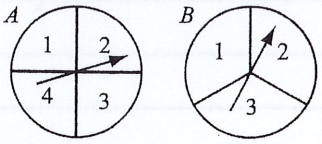
19. A whole number larger than 2 leaves a remainder of 2 when divided by each of the numbers 3, 4, 5 and 6. The smallest such number lies between which two numbers?

(A) 40 and 49 (B) 60 and 79 (C) 100 and 129 (D) 210 and 249 (E) 320 and 369

Tip: Use LCM. LCM(3,4,5,6) = 60

So 62

21. Spinners A and B are spun. On each spinner, the arrow is equally likely to land on each number. What is the probability that the product of the two spinners' numbers is even?



(A) $\frac{1}{4}$ (B) $\frac{1}{3}$ (C) $\frac{1}{2}$ (D) $\frac{2}{3}$ (E) $\frac{3}{4}$

Tip 1: On prob. question, start with finding right denominator ... how many things might happen?

Tip 2: Know your odd-even patterns (Odd x Even = Even, etc)

$\frac{\quad}{4 \times 3} = \frac{8}{12} = \frac{2}{3}$

All 12 except for odd x odd

1x3

1x1

3x1

3x3

24. In the multiplication problem below, A, B, C and D are different digits. What is $A + B$?

$$\begin{array}{r} ABA \\ \times\ CD \\ \hline CDCD \end{array}$$

(A) 1 (B) 2 (C) 3 (D) 4 (E) 9

Tip 1: Don't just freeze. Try something and see what happens. Have a playful, experimental attitude. ... Does A have to be 1? Try it.

Solution → turn it into $CDCD / CD = ABA$

$$\begin{array}{r} ABA \\ \times\ CD \\ \hline 0 \\ CDCD \end{array} \qquad \begin{array}{r} 101 \\ \times 32 \\ \hline 202 \\ 3030 \\ \hline 3232 \end{array}$$