Wise Zebra
Michigan Academy

ORIGINAL COURSE SAMPLE

Prealgebra

Explore a range of ideas. Show your thinking; this is not a placement test.

Name: _____ Date: _____

01 Efficient calculation

Find the value without doing two long multiplications.

25 × 48 + 25 × 52

02 Common multiples

Two signal lights flash together at noon. One flashes every 6 minutes and the other every 8 minutes. In how many minutes will they next flash together?

03 Ratios

A mosaic uses red and blue tiles in the ratio 3 : 5. It has 20 blue tiles. How many red tiles does it have?

04 Perimeter and area

A rectangle has perimeter 46 cm and length 14 cm. Find its width and area.

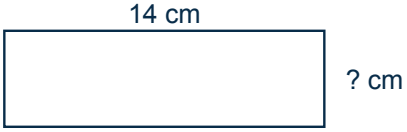

Diagram not to scale

05 Mean and missing data

Four game scores have a mean of 13 points. Three scores are 9, 12, and 15. What is the fourth score?

06 Systematic counting

Make two-digit numbers using 1, 3, 5, and 7. Do not repeat a digit. How many of these numbers are greater than 50? Explain how you know.

Prealgebra

Six worked solutions

01 Efficient calculation

2,500

Both terms have a factor of 25. Combine them: 25 × (48 + 52) = 25 × 100 = 2,500.

02 Common multiples

24 minutes

Multiples of 6 are 6, 12, 18, 24, ... Multiples of 8 are 8, 16, 24, ... The first shared positive multiple is 24.

03 Ratios

12 red tiles

Five equal parts represent 20 blue tiles, so each part is 4 tiles. Red uses 3 parts: 3 × 4 = 12.

04 Perimeter and area

Width 9 cm; area 126 square cm

Length + width is half the perimeter: 46 ÷ 2 = 23. The width is 23 − 14 = 9 cm. Area = 14 × 9 = 126 square cm.

05 Mean and missing data

16 points

The four scores must total 4 × 13 = 52. The three known scores total 36. The missing score is 52 − 36 = 16.

06 Systematic counting

6 numbers

The tens digit is 5 or 7. Each choice leaves 3 choices for the ones digit, so 2 × 3 = 6. The numbers are 51, 53, 57, 71, 73, and 75.