

Grade 7 & 8 Math Circles
November 26/27/28, 2013
Origami & Math Trivia - Solutions

Algebra

Value	Answer
100	10
200	$a^2 - b^2$
300	$x = 2$
400	$5x = 25?$
500	$x = 5$ $y = 2$

History of Numbers

Value	Answer
100	Sample Answer: -1, 0, 1
200	Sample Answer: π , ϕ , e
300	He was drowned / thrown off a boat.
400	$13i$
500	$10 + i$

Finance

Value	Answer
100	45
200	Interest
300	$m = 52$
400	\$50
500	\$1500

Logic Puzzles

Value	Answer
100	Sarah
200	4 Socks
300	It was a grandfather, his son, and his grandson.
400	Only the bottom rung. The boat floats, so it rises with the tide.
500	1458

Similarity and Congruence

Value	Answer
100	Yes
200	Yes
300	SAS must have a contained / included angle. SSRA must have a right angle (doesn't need to be contained).
400	The area is scaled by the factor f^2
500	The Ambiguous Case

Mathematical Gems

Value	Answer
100	Gauss
200	$r = 3$
300	90 000
400	24 cm
500	3050

Tie-breaker!

Answer:

No. Each domino must cover one black and one white square. Two white squares are removed from the board, and so there are 2 more black squares than white squares left. These squares will always be left empty.