

# Oak Grove Math Superstars

Due Dates:



Session	Last Monday of
1	September
2	October
3	November
4	January
5	February
6	March

**Grade 2**

## Session 5 - Answers

(50 points total; 10 points deducted if late)

5 points for each correct answer, unless specified otherwise; 1 point if answer incorrect, but work shown:

1. Matt is participating in a walkathon; he earns 75 cents for every  $\frac{1}{2}$  mile he walks. At the end, he earned \$3.75. How many miles did he walk? **Answer: 2.5 miles since  $\$3.75 / \$0.75 \times 0.5 = 2.5$  miles. {5 points if give correct answer, 2 points if answer is 5 miles; otherwise, 1 point for trying}**

2. How many hours are in 1 week and 3  $\frac{1}{2}$  days? **Answer: 252 hours since  $7 \text{ [days]} \times 24 \text{ [hours/day]} + 3.5 \text{ [days]} \times 24 \text{ [hours/day]} = 252 \text{ [hours]}$  {5 points if give correct answer; 2 points if 168 hours; 2 points if 84 hours; otherwise, 1 point for trying}**

3. For a school parade, there are 6 rows with 7 boys in each row and 5 rows with 7 girls in each row. How many total students are there in the parade? **Answer: 77 students since  $6 \text{ [rows]} \times 7 \text{ [boys/row]} + 5 \text{ [rows]} \times 7 \text{ [girls/row]} = 42 \text{ boys} + 35 \text{ girls} = 77 \text{ students}$  {5 points if give correct answer; otherwise, 1 point for trying}**

4. Benjamin is putting his baseball cards in an album that holds 500 cards. He has 180 rookie cards and 234 player cards. When Benjamin decides to buy more cards to complete his album, he wants to buy an equal number of player cards and rookie cards. How many of each will he buy?

**Answer: 43 player cards and 43 rookie cards since there are  $500 - 180 - 234 = 86$  empty spots left in the album and he wants to buy equal number of cards of two different types, he should buy  $86 / 2 = 43$  player cards and 43 rookie cards. {5 points if give correct answer; 3 points if 43 cards; otherwise, 1 point for trying}**

5. Alexandra bought a candy for 96 cents. The store clerk reversed the two digits. If Alexandra paid with a dollar bill, how much more change did she get back than she should have? **Answer: 27 cents since store clerk reversed the digits, he assumed 69 cents and thus gave her back  $\$1 - 69 \text{ cents} = 31 \text{ cents}$ . Had he not reversed the two digits, the clerk would have returned  $\$1 - 96 \text{ cents} = 4 \text{ cents}$ . The difference is  $31 \text{ cents} - 4 \text{ cents} = 27 \text{ cents}$  {5 points if give correct answer; 2 points if 31 cents; 2 points if 4 cents; otherwise, 1 point for trying}**

6. Alexandra, Benjamin and Suzanne have a total weight of 123 kg. Alexandra's weight is 32 kg. Benjamin weighs twice as much as Alexandra.

a) What is Benjamin's weight? \_\_\_\_\_

b) What is Suzanne's weight? \_\_\_\_\_

**Answer: 64 kg for Benjamin and 27 kg for Suzanne since Benjamin's weight =  $2 \times 32 \text{ kg} = 64 \text{ kg}$  and Suzanne's weight is  $123 \text{ kg} - 32 \text{ kg} - 64 \text{ kg} = 27 \text{ kg}$  {5 points if give correct answer; 3 points if give only one correct answer; otherwise, 1 point for trying}**

7. Mary looked out of her farmhouse window and saw a group of pigeons and donkeys passing by. She counted all the legs of the pigeons and donkeys and found that the total number of legs add up to 66. How many of each kind of animals (pigeons and donkeys) passed by her window if the total number of animals is 24? (10 points) **Answer: 15 pigeons and 9 donkeys since by iteration:**

Pigeons	Donkeys = 24 – Pigeons	Total legs	Comments
12	12	$12 \times 2 + 12 \times 4 = 72$	Too many legs so reduce the donkeys
14	10	$14 \times 2 + 10 \times 4 = 68$	Too many legs so reduce the donkeys
15	9	$15 \times 2 + 9 \times 4 = 66$	Correct answer!

**Or, using algebra: let Pigeons = p and Donkeys = d:  $p \times 2 + (24 - p) \times 4 = 66$  or  $p \times 2 + 96 - p \times 4 = 66$  or  $p \times 2 = 30$  or  $p = 15$  and  $d = 24 - 15 = 9$ . Thus 15 pigeons and 9 donkeys. {10 points if give correct answer; 5 points if 15 pigeons but incorrect donkeys; 5 points if incorrect pigeons but 9 donkeys; otherwise, 2 points for trying}**

8. Answer the following questions (1 point per correct answer):

a.  $\frac{1}{4}$  of 8 = \_\_\_\_\_

b.  $\frac{2}{3}$  of 30 = \_\_\_\_\_

- c. How many inches equal  $\frac{2}{4}$  foot? \_\_\_\_\_
- d. How many centimeters in one meter? \_\_\_\_\_
- e. How many millimeters in one meter? \_\_\_\_\_

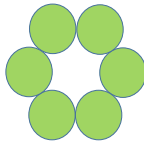
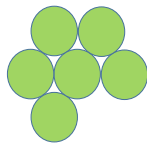
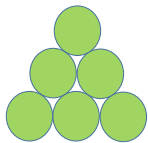
Answer {1 point per correct answer for a total of 5 points}:

- a.  $\frac{1}{4}$  of 8 = 2
- b.  $\frac{2}{3}$  of 30 = 20
- c. How many inches equal  $\frac{2}{4}$  foot? 6 inches
- d. How many centimeters in one meter? 100 centimeters
- e. How many millimeters in one meter? 1,000 millimeters

9. The figure shown in Picture 1 was made out of six identical coins. What is the smallest number of coins that we need to move to make the figure shown in Picture 2?



Answer: 2 since:



{5 points if give correct answer; 2 points if answer is greater than 2; otherwise, 1 point for trying}