

Answer Key

LAS AMERICAS ASPIRA ACADEMY

8TH GRADE SUMMER MATH PACKET—OPTIONAL

The purpose of this packet is to give you an opportunity to review crucial skills from this past year to help ensure that you are prepared for next year's math work. Our math teachers selected the topics that they thought were the most important to your success in the upcoming school year. There is no need to turn this packet in. In fact, the answers to this packet can be found at

<https://laaalibrary.weebly.com/summer.html>. The reason we are making the answer key public to you is so that you can identify topics you might need help with. If you are struggling with a set of problems, feel free to check sites like [khanacademy.org](https://www.khanacademy.org) to see if they can help you. If you continue to struggle please feel free to reach out to me, Mr. Reitemeyer (michael.reitemeyer@laaa.k12.de.us), for support. Good luck and have a great summer.

1. [Integer operations] Solve.

a. $8 + (-11)$

$$-3$$

b. $(-7) + (-18)$

$$-25$$

c. $9 - (-6)$

$$15$$

d. $(-13) - (-4)$

$$-9$$

e. $8 \times (-3)$

$$-24$$

f. $(-5) \times (-7)$

$$35$$

g. $(-80) \div 10$

$$-8$$

h. $(-24) \div (-6)$

$$4$$

2. [One-step equations] Solve.

a. $17 - x = 3$

$$x = 14$$

c. $6x = 42$

$$x = 7$$

b. $20 = 11 + x$

$$x = 9$$

d. $\frac{x}{3} = 12$

$$x = 36$$

3. [Two-step equations] Solve.

a. $5x + 1 = 31$

$$x = 6$$

d. $10 - 2x = 2$

$$x = 4$$

b. $7 + 3x = 28$

$$x = 7$$

e. $\frac{2x}{5} = 40$

$$x = 100$$

c. $20 = 2x - 8$

$$x = 14$$

f. $\frac{x+3}{3} = 15$

$$x = 42$$

4. [Translating expressions] Write an expression (no equals sign) for each context.

a. Tyler tripled the number of shoes he owns.

$$3 \times T \quad [\text{the variable can be any letter.}]$$

b. Mac has 30 fewer dollars in his bank account than he did last week.

$$M - 30$$

c. Nyasha doubled how much money she had then spent 5 dollars.

$$2 \times N - 5$$

d. So far this year Tim has scored two more than half the goals he scored last year.

$$\frac{T}{2} + 2$$

5. [Translating equations] Write an equation (include an equals sign) for each context.

a. Jay has 17 fewer dollars than Tyshon.

$$J = T - 17$$

- b. Sarah has two fewer dollars than double what Mariah has.

$$S = 2 \times M - 2$$

- c. If you halved Nayeli's allowance it would be the same as triple Jose's allowance.

$$\frac{N}{2} = 3 \times J \quad \text{OR} \quad \frac{1}{2} \times N = 3 \times J$$

6. [Translating equations] Write a context (a sentence, like from Questions 4 & 5) for each equation.

a. $x - 5 = 16$

Answers will vary. Here are a few options...

a. Juan lost 5 marbles and now has 16 marbles.

b. $3c = a$

b. We have three times as many apples as we do carrots.

c. $b + 1 = 2pc$. If the Bears had 1 more point they would have double the Patriot's score.

7. [One and two-step inequalities] Solve.

a. $x + 8 < 14$

$$x < 6$$

c. $10 - x \leq 8$

$$x \geq 2$$

b. $2x - 1 \geq 19$

$$x \geq 10$$

d. $-3x + 1 > 22$

$$x < -7$$

8. [Proportions] Solve for x.

a. $\frac{1}{5} = \frac{2}{x}$

$$x = 10$$

b. $\frac{2}{6} = \frac{x}{12}$

$$x = 4$$

$$c. \frac{3}{5} = \frac{9}{x+1}$$

$$x = 14$$

$$f. \frac{18}{24} = \frac{5-x}{4}$$

$$x = 2$$

$$d. \frac{3x}{5} = \frac{6}{10}$$

$$x = 1$$

$$g. \frac{45}{81} = \frac{5}{x}$$

$$x = 9$$

$$e. \frac{1}{x} = \frac{3}{15}$$

$$x = 5$$

$$h. \frac{3}{90} = \frac{1}{2x}$$

$$x = 15$$