7.RP.A

Analyze proportional relationships and use them to solve real-world and mathematical problems.

1. Edie uses $\frac{1}{4}$ gallon of blue paint for every $\frac{2}{3}$ gallon of yellow paint to make green paint. How many gallons of blue paint does she use for 1 gallon of yellow paint?
2. A toy jeep is 12$\frac{1}{2}$ inches long while an actual jeep measures 18$\frac{3}{4}$ feet long. What is the ratio of the length of the toy jeep to length of the actual jeep? What does the ratio mean in this situation?
3. During their last workout, Izzy ran 2$\frac{1}{4}$ miles in 16 minutes and her friend Julia ran
3$\frac{3}{4}$ miles in 28 minutes. Based on their last workout, which girl was the faster runner? Support your answer with a unit rate for each girl.
4. Mr. Stoven is making trail mix. The amount of raisins in the trail mix is proportional to the amount of peanuts. This equation represents the proportional relationship between the number of cups of raisins (*r*) and the number of cups of peanuts (*p*).

4*r* = 3*p*

What is the number of cups of raisins used for 1 cup of peanuts?

1. You have decided to remodel your bathroom and install a tile floor. The bathroom is in the shape of a rectangle measuring 14 feet 8 inches by 5 feet 6 inches. The tiles you want to use cost $5 each, and each tile covers 5$\frac{2}{3}$ square feet. You have $100 to spend. Do you have enough money to complete the project? Explain your reasoning.

7.RP.A

Analyze proportional relationships and use them to solve real-world and mathematical problems.

1. Select **all** tables that represent proportional relationships between *x*, the independent variable, and *y*, the dependent variable.

A.

| ***x*** | 0 | 3 | 6 | 9 | 12 | 15 |
| --- | --- | --- | --- | --- | --- | --- |
| ***y*** | 0 | 1 | 2 | 3 | 5 | 8 |

B.

| ***x*** | –1 | 0 | 1 | 2 | 3 | 4 |
| --- | --- | --- | --- | --- | --- | --- |
| ***y*** | 3 | 0 | 5 | 2 | 7 | 4 |

C.

| ***x*** | –4 | –2 | 0 | 2 | 4 | 6 |
| --- | --- | --- | --- | --- | --- | --- |
| ***y*** | –12 | –6 | 0 | 6 | 12 | 18 |

D.

| ***x*** | –3 | –2 | –1 | 0 | 1 | 2 |
| --- | --- | --- | --- | --- | --- | --- |
| ***y*** | 15 | 10 | 5 | 0 | –5 | –10 |

1. Howard and Michael go to lunch. They don’t want to spend more than $18 each for lunch, including tax and a tip. They estimate the tax and tip at 25% of the price of their meal. Each boy determines the maximum price of their meal, before tax and tip, using different methods.

| **Howard’s Work** | **Michael’s Work** |
| --- | --- |
| 100% — 25% = 75% | 100% + 25% = 125% |
| *x* is the maximum meal price | *x* is the maximum meal price |
| *x* = 0.75(18) | 1.25*x* = 18 |
| *x* = 13.50 | *x* = 14.40 |
| The maximum meal price is $13.50. | The maximum meal price is $14.40. |

 Which boy correctly determined the maximum price of their meal, before tax and tip? Describe why the other boy’s method does **not** work.

1. A car dealer sold a car for 120% of the base price. The car sold for $24,000. What was the base price of the car?

**Teacher Material**

7.RP.A

Analyze proportional relationships and use them to solve real-world and mathematical problems.

| **Question** | **Claim** | **Key/Suggested Rubric** |
| --- | --- | --- |
| 1[[1]](#footnote-1) | 1 | **1 point:**$ \frac{3}{8}$, or equivalent |
| 2[[2]](#footnote-2) | 3 | **2 points:** 1 inch to 1.5 feet, or equivalent OR 1 to 18, or equivalent AND a description of the meaning of the ratio. Example 1: The ratio is 1 inch to 1.5 feet. This meant that every inch on the toy jeep represents 1.5 feet on the actual jeep. Example 2: The ratio is 1 to 18. This means that the actual jeep is 18 times as large as the toy jeep.**1 point:** 1 inch to 1.5 feet, or equivalent OR 1 to 18, or equivalent OR a description of the meaning of the ratio. |
| 32 | 1 | **1 point:** Izzy AND provides a correct unit rate for both students. NOTE: unit rates must both be in the same form: miles per minute, miles per hour, minutes per mile, hours per mile, etc. |
| 41 | 1 | **1 point:** $\frac{3}{4}$, or equivalent |
| 52 | 4 | **1 point:** Answers will vary. Example: Yes. I can buy 20 tiles, which cover more than 100 square feet because 20 $×$ 5 = 100 and each tile has an area greater than 5 square feet. The area of the bathroom is less than 90 square feet because 15 $×$ 6 = 90 and the dimensions of the bathroom are less than 15 feet by 6 feet. |
| 61 | 1 | **1 point:** Selects C and D |
| 7[[3]](#footnote-3) | 3 | **1 point:** Michael AND describes why Howard’s method does not work. Example: Michael is correct. Howard’s method doesn’t work because the 25% is being added to the price of the meal, not subtracted from the total amount of money that they spend. Also, 25% of 14.40 is not the same amount as 25% of 18. |
| 8[[4]](#footnote-4) | 2 | **1 point:** $20,000 |

1. From Smarterbalanced.org. Grade 7, Claim 1, Target A Item Specifications. Internet. Available from <http://www.smarterbalanced.org/smarter-balanced-assessments/>; accessed 11/2015. [↑](#footnote-ref-1)
2. Adapted from the Mathematics K–12 Learning Standards. Internet. Available from <http://www.k12.wa.us/Mathematics/Standards.aspx>; accessed 11/2015. [↑](#footnote-ref-2)
3. Adapted from Smarterbalanced.org. Grades 6–8, Claim 3 Item Specifications. Internet. Available from <http://www.smarterbalanced.org/smarter-balanced-assessments/>; accessed 11/2015. [↑](#footnote-ref-3)
4. Adapted from Smarterbalanced.org. Grades 6–8, Claim 2 Item Specifications. Internet. Available from <http://www.smarterbalanced.org/smarter-balanced-assessments/>; accessed 11/2015. [↑](#footnote-ref-4)