The Unit Rate

Say both names every time: the unit rate, the constant of proportionality. Find it by dividing an output by its input, or by asking how much for one.

Name _____ Date _____

Words we use

say the math word, then the plain English

WORD	PLAIN ENGLISH	WHAT YOU DO
Unit rate	How much for one.	Divide an output by its input.
Constant of proportionality	The unit rate: the number the relationship always multiplies by.	Find it in a table, in words, on a graph, or in the equation. It never changes.
Constant	Never changes.	Check a few rows: the number should be the same in every one.
Compare	Decide which is more, and say why.	Line up the units, find each unit rate, and the bigger one gives more for the same input.

Part A Find the constant

1. A table: 3 pounds of apples $4.50, 5 pounds $7.50. The unit rate?

2. A landscaper charges $140 for 4 hours. The unit rate?

3. Pairs: (4, 10), (6, 15), (10, 25). The constant of proportionality? The output for an input of 14?

Part B Which pairs fit $35 an hour?

PAIR	35 × HOURS	FITS?
6 hours, $210		
10 hours, $350		
2 hours, $80		
3 hours, $105		

Part C Compare

1. Mia earns $45 for 5 hours. Jordan's table: 2 hours $16, 3 hours $24, 5 hours $40. Find both unit rates. Who earns more for 10 hours, and by how much?

2. Game A gives 150 coins for 6 levels. Game B gives 200 coins for 10 levels. Which gives more coins per level?

3. Ava earns $12 an hour. Ben earns $5 per lawn. Can you compare their rates? Why or why not?

Part D Exit ticket

1. Store A sells 6 pencils for $1.50. Store B: 4 pencils for $1.20, 10 pencils for $3.00. Which store has the lower unit rate?

2. What does constant of proportionality mean, in plain English?

3. The landscaper charges $35 an hour. Does 2 hours for $80 fit?

Answer key

Part A. 1. $1.50 per pound. 2. $35 an hour. 3. 2.5; an input of 14 gives 35.

Part B. 210, fits. 350, fits. 70, does not fit. 105, fits.

Part C. 1. Mia $9 an hour, Jordan $8 an hour. Mia earns $90 to Jordan's $80, $10 more. 2. Game A, 25 coins per level versus 20. 3. No: dollars per hour and dollars per lawn are different kinds of units.

Part D. 1. Store A, $0.25 a pencil versus $0.30. 2. The unit rate, the number the relationship always multiplies by; constant means never changes. 3. No, 35 × 2 = 70, not 80.