Section 5.3 Notes: Rates

Key Vocabulary

Rate

* a ratio of two quantities using different units

Ex: $7.00 for 2 pounds of hamburger

Unit Rate

* Compares a quantity to <u>one</u> unit of another

Ex: $3.50 for 1 Pound of hamburger

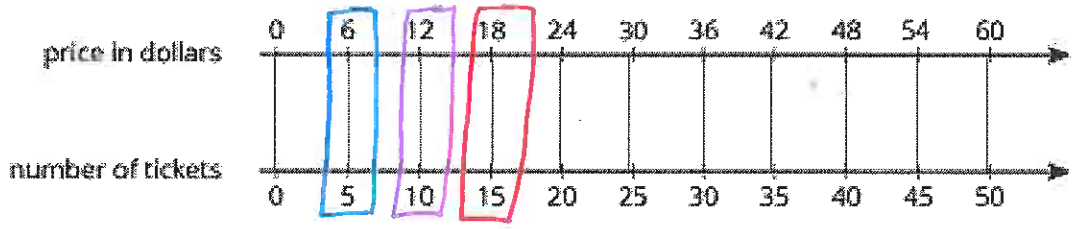
Equivalent Rates

* rates that have the same unit rate

Ex) $7 for 2 pounds of hamburger
$10.50 for 3 pounds of hamburger
* Both amounts work out to $3.50 for 1 pound

Rates from a Double Number Line

The double number line shows the rate at which you pay for the amount of tickets you purchase to an event. Write 3 different rates that represent this situation.



* $6 for 5 tickets
* $12 for 10 tickets
* $18 for 15 tickets

→ could be any other rates though from the table (the 3 above are just 3 options)

Finding a Unit Rate Examples:

1) A car traveled 135 miles in 3 hours. How far did the car travel per hour?

miles	135	45
hours	3	1

(÷3 → 45; ÷3 → 1)

$3\overline{)135}$ → 45, -12, 15, -15, 0

45 miles in 1 hour

*unit rate always relates it to 1

2) At mid-latitudes, Earth spins 3 miles in 10 seconds. How far does it spin per second?

miles	3	3/10
seconds	10	1

(÷10 → 3/10; ÷10 → 1)

Earth spins $\frac{3}{10}$ mile in 1 second

or

Earth spins 0.3 mile in 1 second

Finding Equivalent Rates

A chef buys 6 pounds of salmon fillets for $51. How much will the chef pay for 9 more pounds of salmon fillets?

Cost (dollars)	51	÷6 →	8.5	×9 →	76.5
Salmon (pounds)	6	÷6 →	1	×9 →	9

$6\overline{)51.0}$ → 8.5, -48, 30, -30, 0

$8.5 \times 9 = 76.5$

*determine the cost for 1 pound → to then help find the cost for 9 pounds

$76.50