

Day 1 - Real World Slopes - Notes

If a graph, table, equation, or context represents a real world situation, the slope has a meaning that can be interpreted as a rate of change. For the following representations, calculate the slope and interpret it as a rate of change.

a.

Number of Carnival Ride Tickets	Cost (dollars)
4	9
8	12
16	18
32	30

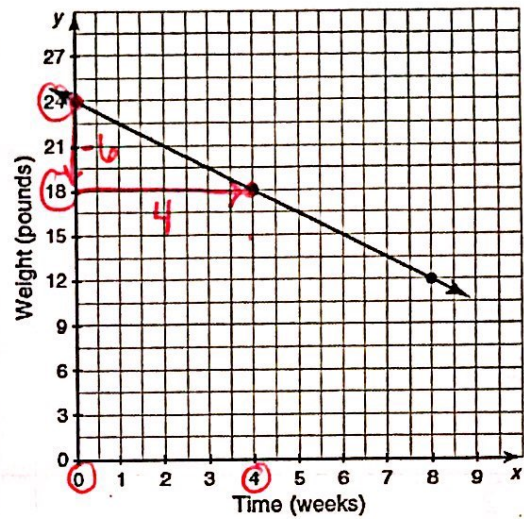
Slope/Rate of Change:

$$\frac{\$3}{4 \text{ tickets}}$$

Unit Rate of Change:

$$\frac{\$0.75}{1 \text{ ticket}}$$

b.



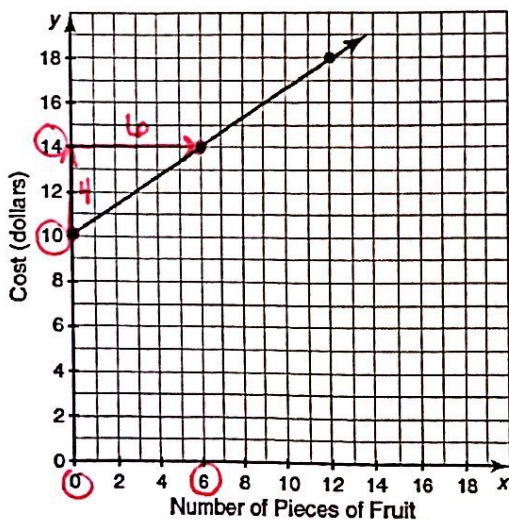
Slope/Rate of Change:

$$\frac{-6 \text{ pounds}}{4 \text{ weeks}}$$

Unit Rate of Change:

$$\frac{-1.5 \text{ pounds}}{1 \text{ week}}$$

c.



Slope/Rate of Change:

$$\frac{\$4}{6 \text{ pieces}}$$

Unit Rate of Change:

$$\frac{\$0.67}{1 \text{ piece}}$$

d. Bella's Pizza Shop charges \$4.50 for a small pizza, \$7 for a medium pizza, and \$9 for a large pizza. Toppings cost extra depending on the size of the pizza ordered. Grayson ordered a large pizza with three toppings that cost a total of \$12.60. What is the unit rate of cost per number of toppings for a large pizza?

$$12.60 - 9.00 = \$3.60 \text{ for toppings}$$

$$\$3.60 \div 3 \text{ toppings} = \boxed{\$1.20 \text{ per topping}}$$

e. A maintenance crew is paving a road. They are able to pave one eighth of a mile of a road during each working shift. A working shift is 7 hours. What is the unit rate of yards of road paved per hour?

$$\frac{1}{8} \text{ mile} = 660 \text{ ft}$$

$$660 \div 3 \text{ ft} = 220 \text{ yards in one shift}$$

$$\frac{220 \text{ yards}}{7 \text{ hours}} = \boxed{\frac{31.4 \text{ yards}}{1 \text{ hour}}}$$

f. One hundred twenty teenagers attended the community center's dance. Each ticket costs \$5. The community center's expenses for the dance are \$140 for the DJ and \$60 for other expenses? What was the profit that center made? What is the profit made in dollars for each ticket sold?

$$120 \text{ teens} \times \$5 = \$600 \text{ raised}$$

$$\$140 \text{ (DJ)} + \$60 \text{ (expenses)} = \$200 \text{ expenses}$$

$$\$600 - \$200 = \boxed{\$400 \text{ in profit}}$$

$$\frac{\$400}{120 \text{ tickets}} = \boxed{\frac{\$3.33}{1 \text{ ticket}}}$$