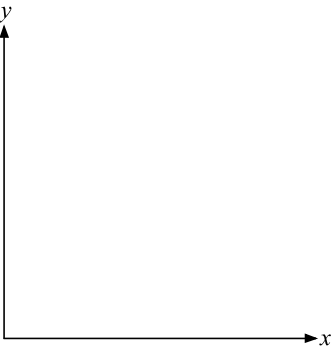
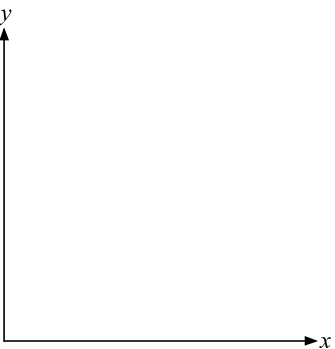
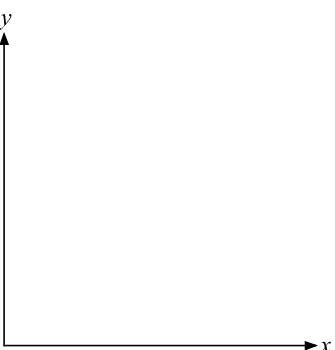
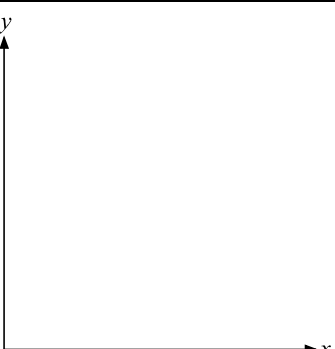


Four Situations

1. Sketch a graph to model each of the following situations.
Think about the shape of the graph and whether it should be a continuous line or not.

<p>A: Candle</p> <p>Each hour a candle burns down the same amount.</p> <p>x = the number of hours that have elapsed.</p> <p>y = the height of the candle in inches.</p>	
<p>B: Letter</p> <p>When sending a letter, you pay quite a lot for letters weighing up to an ounce. You then pay a smaller, fixed amount for each additional ounce (or part of an ounce.)</p> <p>x = the weight of the letter in ounces.</p> <p>y = the cost of sending the letter in cents.</p>	
<p>C: Bus</p> <p>A group of people rent a bus for a day. The total cost of the bus is shared equally among the passengers.</p> <p>x = the number of passengers.</p> <p>y = the cost for each passenger in dollars.</p>	
<p>D: Car value</p> <p>My car loses about half of its value each year.</p> <p>x = the time that has elapsed in years.</p> <p>y = the value of my car in dollars.</p>	

2. The formulas below are models for the situations.

Which situation goes with each formula?

Write the correct letter (A, B, C or D) under each one.

$$y = \frac{300}{x}$$

$$y = 12 - 0.5x$$

$$y = 30 + 20x$$

$$y = 2000 \times (0.5)^x$$

Situation

Situation

Situation

Situation

3. Answer the following questions using the formulas.
Under each answer show your reasoning.

a. How long will the candle last before it burns completely away?

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b. How much will it cost to send a letter weighing 8 ounces?

.....

c. If 20 people go on the coach trip, how much will each have to pay?

.....

d. How much will my car be worth after 2 years?

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