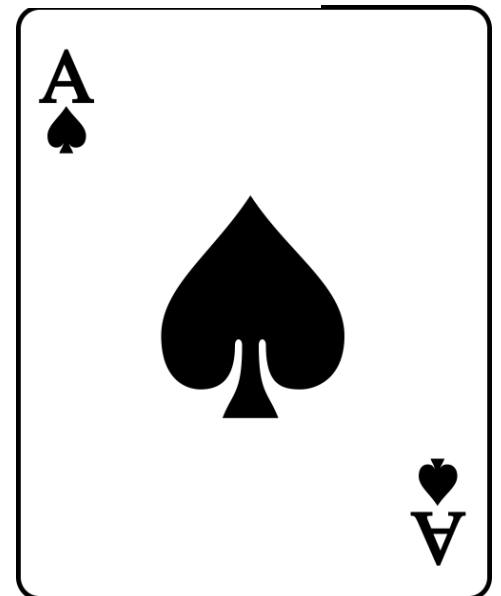
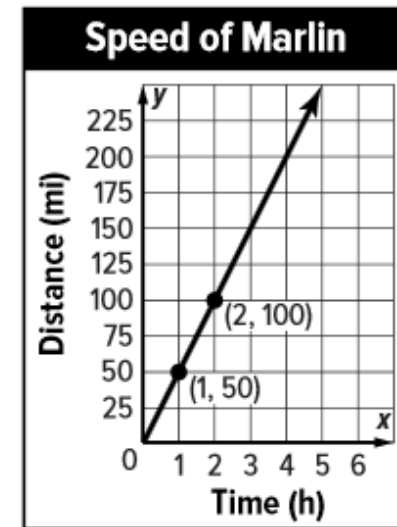


The distance  $y$  in miles traveled by a striped marlin in  $x$  hours is shown on the graph. Each ocean creature's distance in miles is a direct variation of the time it travels in hours. Select whether each ocean creature travels faster than the striped marlin. 8.EE.5, 8.F.2

**Yes      No**

- |                          |                          |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | a tuna that travels at a speed of 43.5 miles per hour  |
| <input type="checkbox"/> | <input type="checkbox"/> | a swordfish whose distance $y$ in miles is represented by the equation $y = 60x$ , where $x$ is the number of hours  |
| <input type="checkbox"/> | <input type="checkbox"/> | a wahoo fish that travels 144 miles in 3 hours and 192 miles in 4 hours  |
| <input type="checkbox"/> | <input type="checkbox"/> | a mako shark whose distance $y$ in miles is represented by the equation $y = 31x$ , where $x$ is the number of hours |

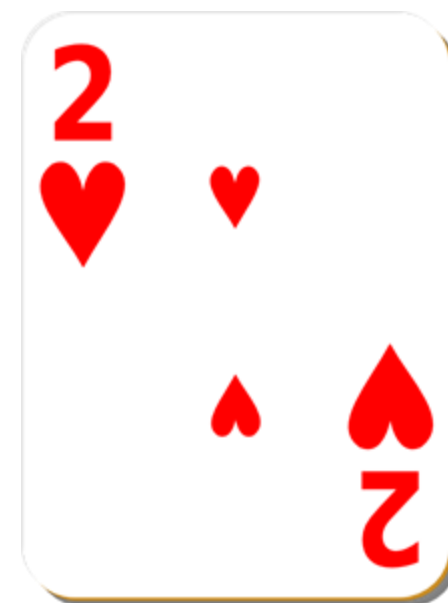


The table shows how the height of a candle  $y$  changes  $x$  hours after it has been lit. Select whether each statement is true or false. 8.F.4

**True    False**

- |                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | The initial height of the candle was 16 inches.   |
| <input type="checkbox"/> | <input type="checkbox"/> | The height of the candle decreases by 2 inches every 1 hour.  |
| <input type="checkbox"/> | <input type="checkbox"/> | The height of the candle after 3 hours is 6 inches.   |
| <input type="checkbox"/> | <input type="checkbox"/> | The height of the candle after 7 hours is 2 inches.   |
| <input type="checkbox"/> | <input type="checkbox"/> | The height of the candle $y$ after $x$ hours can be represented by the equation $y = 2x + 16$ .   |
| <input type="checkbox"/> | <input type="checkbox"/> | A different candle was originally 30 inches but burned at a rate twice as fast as this candle. This candle burned out (height reached 0) more quickly than the candle in the table. |

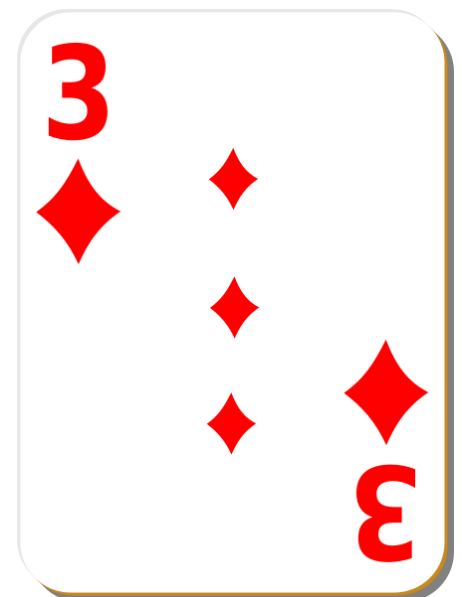
Time (h), $x$	Candle Height (in.), $y$
0	16
2	12
4	8
6	4



The state of Colorado is shown to the right. The shape of Colorado closely resembles a rectangle.

**Part A:** Find the approximate area of Colorado.

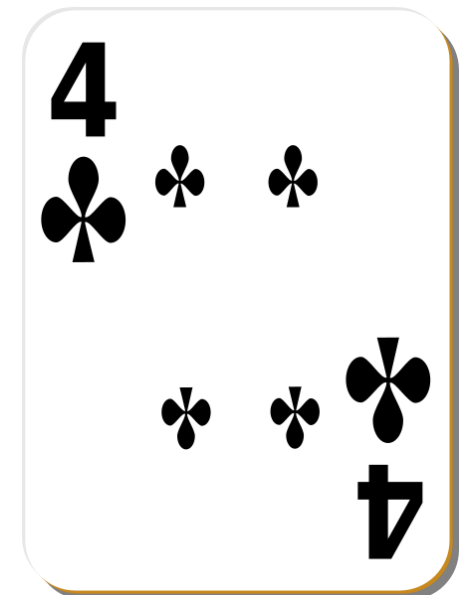
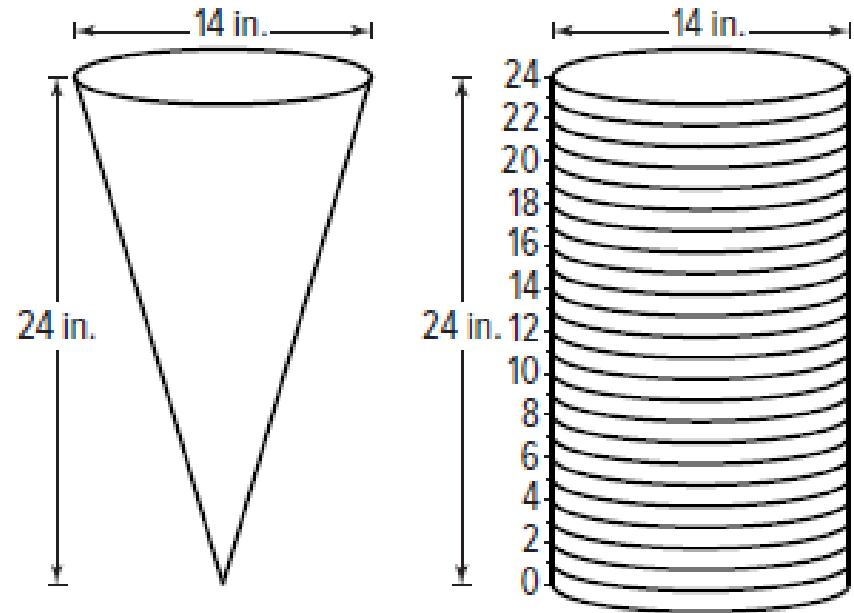
**Part B:** Find the approximate perimeter of Colorado.



Sam has two containers – one shaped like a cone and the other shaped like a cylinder.

**Part A:** Sam fills the cone-shaped container to the top with water. What is the volume of water in the cone? Write it as an exact answer.

**Part B:** Sam pours all of the water from the cone into the cylinder. What will be the height of the water in the cylinder? (Which inch mark will it reach?)

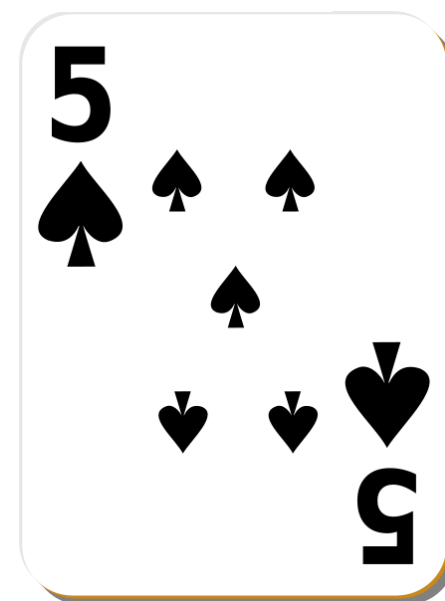


Write a number in each box to make an equation that has no real solution. 8.EE.7, 8.EE.7a

$$4(a - 2) + a = \boxed{\phantom{00}}a - \boxed{\phantom{00}}$$

Complete the equation so that it has an infinite number of solutions. Write one number in each box. 8.EE.7, 8.EE.7a

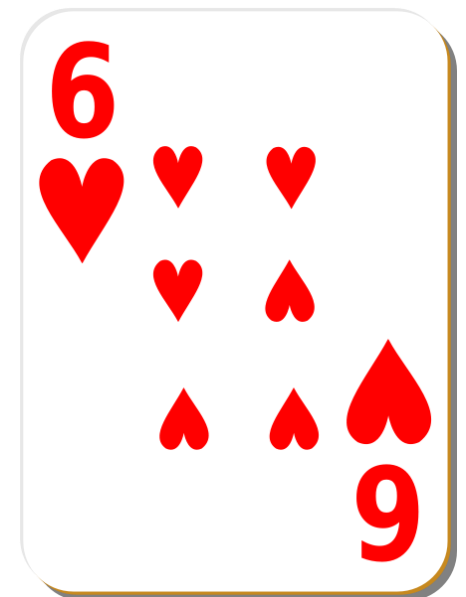
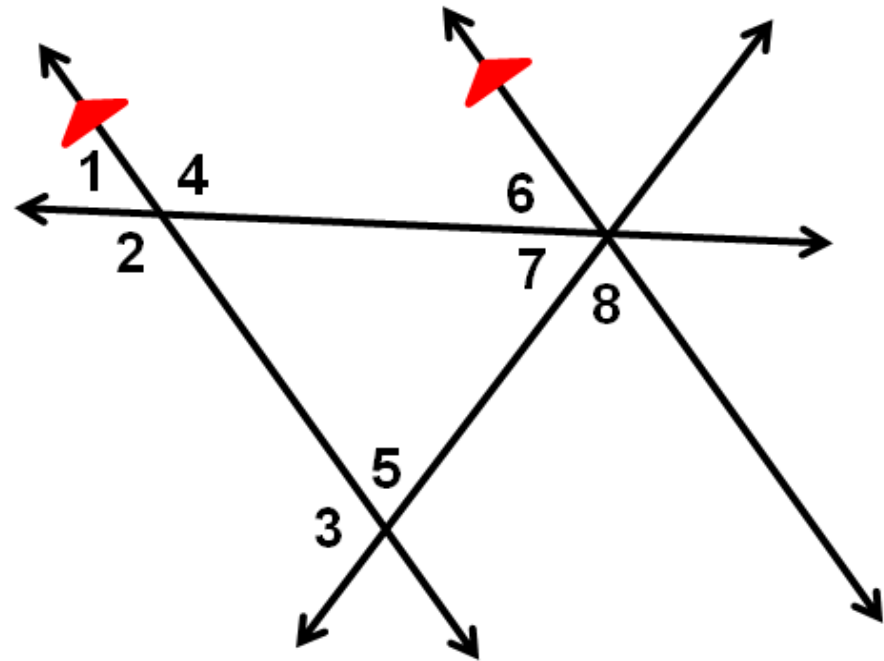
$$2(4k - 2) - 2k = \boxed{\phantom{00}}k - \boxed{\phantom{00}}$$



Select whether each pair of angles MUST be congruent. (Yes or no) For each pair of angles that IS congruent, write down which type of special angle pair they are.

- A) 6 and 8
- B) 2 and 4
- C) 1 and 6
- D) 2 and 3
- E) 5 and 7
- F) 1 and 7

There is one more pair of angles from the diagram that MUST be congruent that is not mentioned above. Which pair of angles is this?

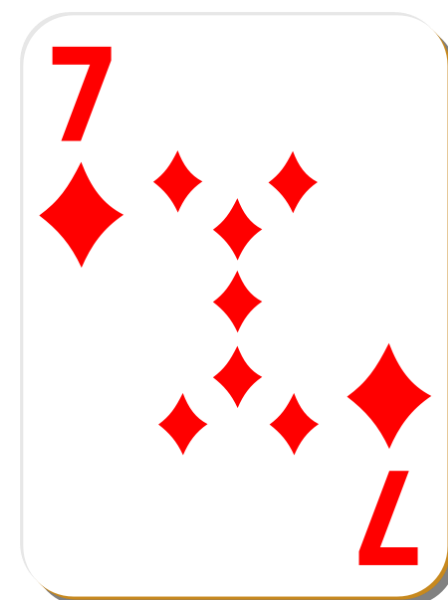


Dr. Bach advises his patients to eat grapefruit for breakfast. Each grapefruit is shaped like a sphere and has a peel 1 centimeter thick. Select whether each serving has at least 500 cubic centimeters of fruit. 8.G.9

**Yes**

**No**

- |                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | whole grapefruit with a total radius of 6 cm    |
| <input type="checkbox"/> | <input type="checkbox"/> | half a grapefruit with a total radius of 7 cm   |
| <input type="checkbox"/> | <input type="checkbox"/> | whole grapefruit with a total diameter of 10 cm |



How many triangles are in this diagram???

