

# SAT数学

张斯乐



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## ◆ 2.Problem Solving & Data Analysis

### 2.1 Ratio/Rate/Proportion/Percent/Units

Equation of a line:  $y = kx + b$  where  $k$  is the slope,  $b$  is the y-intercept.

The constant  $k$  tells for each unit change in  $x$  how much  $y$  increases or decreases.

The constant  $b$  represents some starting value for  $y$  or some initial condition.

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## ◆ 2. Problem Solving & Data Analysis

### 2.1 Ratio/Rate/Proportion/Percent/Units

1. The ratio of A to B—A:B
2.  $x$  percent of  $y$ — $x\% \cdot y$
3. If  $y$  varies directly as  $x$ , then  $y=kx$ .
4. If  $y$  varies inversely as  $x$ , then  $xy=k$  where  $k$  is a nonzero constant.

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## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

1. The weight of an object on Venus is approximately  $\frac{9}{10}$  of its weight on Earth. The weight of an object on Jupiter is approximately  $\frac{23}{10}$  of its weight on Earth. If an object weighs 100 pounds on Earth, approximately how many more pounds does it weigh on Jupiter **than** it weighs on Venus?

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

2. Alan drives an average of 100 miles each week. His car can travel an average of 25 miles per gallon of gasoline. Alan would like to reduce his weekly expenditure on gasoline by \$5. Assuming gasoline costs \$4 per gallon, which equation can Alan use to determine how many fewer average miles,  $m$ , he should drive each week?

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

3. One morning, Ms. Simon drove directly from her home to her workplace in 24 minutes. What was her average speed, in miles per hour, during her drive that morning?

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

4. If Ms. Simon starts her drive at 6:30 a. m., she can drive at her average driving speed with no traffic delay for each segment of the drive. If she starts her drive at 7:00 a. m., the travel time from the freeway entrance to the freeway exit increases by 33% due to slower traffic, but the travel time for each of the other two segments of her drive does not change. Based on the preceding, how many more minutes does Ms. Simon take to arrive at her workplace if she starts her drive at 7:00 a. m. than if she starts her drive at 6:30 a. m.? (Round your answer to the nearest minute.)

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

5. To make a bakery' s signature chocolate muffins, a baker needs 2.5 ounces of chocolate for each muffin. How many pounds of chocolate are needed to make 48 signature chocolate muffins? (1 pound equals 16 ounces.)



## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

# 作业讲解-第6题到第11题

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

6. The volume of right circular cylinder A is 22 cubic centimeters. What is the volume, in cubic centimeters, of a right circular cylinder with twice the radius and half the height of cylinder A?

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## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

7. In State X, Mr. Camp's eighth-grade class consisting of 26 students was surveyed and 34.6 percent of the students reported that they had at least two siblings. The average eighth-grade class size in the state is 26. If the students in Mr. Camp's class are representative of students in the state's eighth-grade classes and there are 1,800 eighth-grade classes in the state, which of the following best estimates the number of eighth-grade students in the state who have fewer than two siblings?

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

8. How many liters of a 25% saline solution must be added to 3 liters of a 10% saline solution to obtain a 15% saline solution?

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

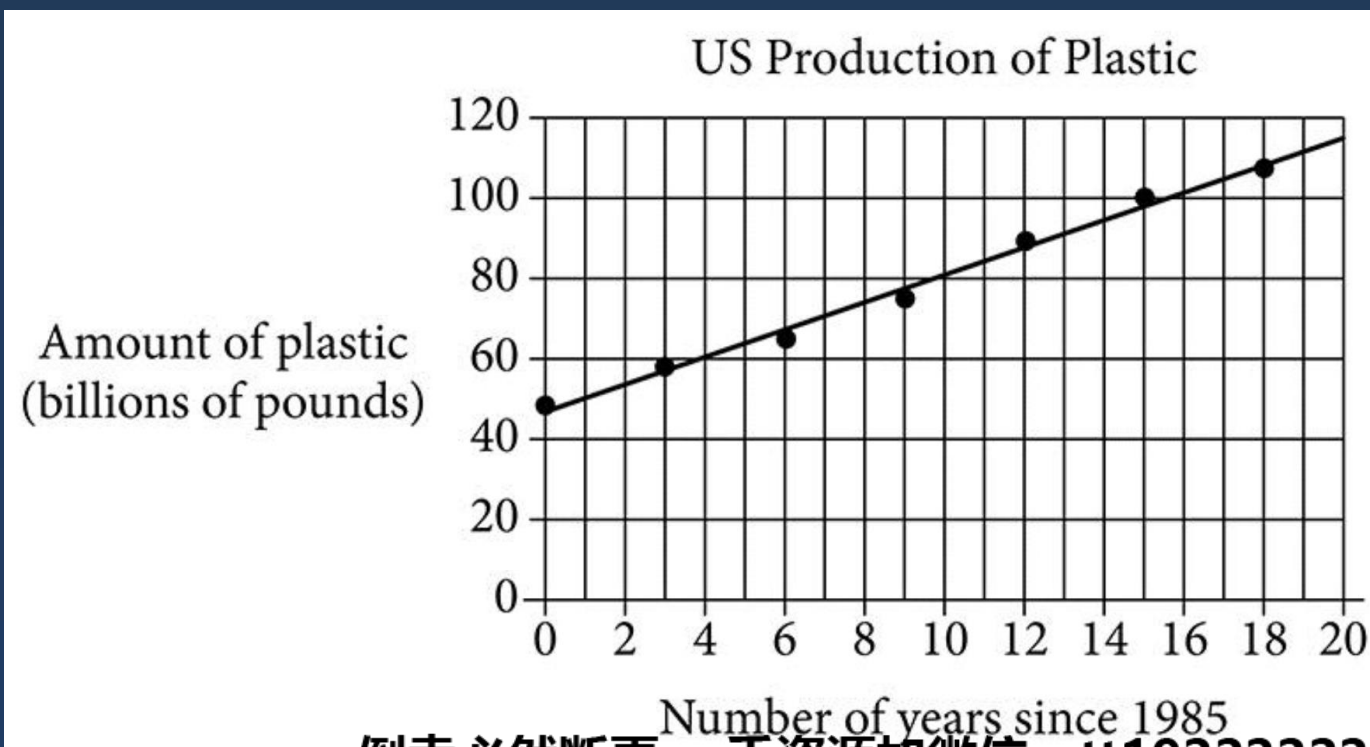
9. A school district is forming a committee to discuss plans for the construction of a new high school. Of those invited to join the committee, 15% are parents of students, 45% are teachers from the current high school, 25% are school and district administrators, and the remaining 6 individuals are students. How many more teachers were invited to join the committee than school and district administrators?

## ◆ 2.1 Ratio/Rate/Proportion/Percent/Units

10. The manager of an online news service received the preceding report on the number of subscriptions sold by the service. The manager estimated that the percent increase from 2012 to 2013 would be double the percent increase from 2013 to 2014. How many subscriptions did the manager expect would be sold in 2014?

## 2.1 Ratio/Rate/Proportion/Percent/Units

11.



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# Thanks

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