Question ID 954943a4

P´PLEUM

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 954943a4

3.1

Jennifer bought a box of Crunchy Grain cereal. The nutrition facts on the box state that a serving size of the cereal is $\frac{3}{4}$ cup and provides 210 calories, 50 of which are calories from fat. In addition, each serving of the cereal provides 180 milligrams of potassium, which is 5% of the daily allowance for adults. If p percent of an adult's daily allowance of potassium is provided by x servings of Crunchy Grain cereal per day, which of the following expresses p in terms of x ?

1 หน่วย บริโภค

5% ของปริมาณที่จะได้รับ

serve

p %

1 serve 5% ของปริมาณที่จะได้รับ

x serve x·5% w——w

$p\cancel{\%} = x\,5\cancel{\%}$

$p = 5x$ //

A. $p = 0.5x$

B. $p = 5x$

C. $p = (0.05)^x$

D. $p = (1.05)^x$

Question ID 65c49824

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 65c49824

3.2

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?

(15 %)

$0.15X = 6$

$X = 40$

$|0.45(40) - 0.25(40)| = 8$ //

Question ID 0ea56bb2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 0ea56bb2

3.3

Year	Subscriptions sold
2012	5,600
2013	5,880

5%

2.5

2014 6,027

$5\% = 2(x)$

$x = 2.5$

The manager of an online news service received the report above 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?

A. 6,020

B. 6,027

C. 6,440

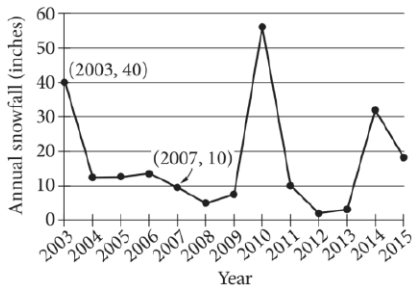
D. 6,468

Question ID 0231050d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 0231050d

3.4



The line graph shows the total amount of snow, in inches, recorded each year in Washington, DC, from 2003 to 2015. If $p\%$ is the percent decrease in the annual snowfall from 2003 to 2007, what is the value of p ?

$$\frac{10-40}{40} = -75\% \text{ (4 years)}$$

$p = 75$ (ไม่ต้องหารทั้งสิ้น)

Question ID 67c0200a

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 67c0200a 3.5

The number a is 70% less than the positive number b. The number c is 80% greater than a. The number c is how many times b?

$c = xb$

$a = 0.3b$

$c = 1.8a$

$c = 1.8(0.3b)$

$c = 0.54b$

$x = 0.54$ //

Question ID 55818046

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 55818046 3.6

According to the 2010 Census, the adult population aged 18 years or greater of the United States in 2010 was 234,564,071. In 2010, a survey was conducted among a randomly chosen sample of adults aged 18 years or greater in the United States about their preference to live in a warm climate or a cool climate. The table below displays a summary of the survey results.

Climate Preferences

	Warm	Cool	No preference	Total
18–35 years old	295	168	45	508
36–50 years old	246	123	41	410
51–65 years old	238	117	48	403
Greater than 65 years old	137	78	64	279
Total	916	486	198	1,600

Percent / Fraction ของอะไรตัวนั้นเป็นส่วน

Which of the following is closest to the difference between the percentage of adults aged 18–50 years who responded "warm" and the percentage of adults aged 51 years or greater who responded "warm"?

A. 4%

B. 5%

C. 10%

D. 18%

$$\left| \frac{295+246}{508+410} - \frac{238+137}{403+279} \right|$$

$= 0.03947$

$= 3.947\%$

$\approx 4\%$ //

Question ID 20845d36

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 20845d36

3.7

The number a is 70% less than the positive number b. The number c is 60% greater than a. The number c is how many times b?

$a = 0.3b$

$c = 1.6a$

$c = 1.6(0.3b)$

$= 0.48b$

$x = 0.48$

$c = xb$

Question ID 8c5dbd3e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 8c5dbd3e 3.8

The number w is 110% greater than the number z. The number z is 55% less than 50. What is the value of w?

$W = 2.1Z$

$Z = 0.45(50)$

$Z = 22.5$

$W = 2.1(22.5)$

$= 47.25$ //

Question ID 8213b1b3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 8213b1b3

3.9

According to a set of standards, a certain type of substance can contain a maximum of 0.001% phosphorus by mass. If a sample of this substance has a mass of 140 grams, what is the maximum mass, in grams, of phosphorus the sample can contain to meet these standards?

$$140\left(\frac{0.001}{100}\right) = 0.0014$$

Question ID 34f8cd89

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 34f8cd89 3.10

37% of the items in a box are green. Of those, 37% are also rectangular. Of the green rectangular items, 42% are also metal. Which of the following is closest to the percentage of the items in the box that are not rectangular green metal items?

A. 1.16%

B. 57.50%

C. 94.25%

D. 98.84%

$100\% - (0.37)(0.37)(42\%) = 94.2502\%$

$\approx 94.25\%$

ทิ้ง % ไว้ 1 ตัวให้ หน่วยเป็น %

Question ID 25faa756

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 25faa756 3.11

The number a is 60% greater than the positive number b. The number c is 45% less than a. The number c is how many times b?

$c = x b$

$a = 1.6 b$

$c = 0.55 a$

$c = 0.55(1.6b)$

$= 0.88b$

$x = 0.88$

Question ID ad911622

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: ad911622

3.12

The value of a collectible comic book increased by 167% from the end of 2011 to the end of 2012 and then decreased by 16% from the end of 2012 to the end of 2013. What was the net percentage increase in the value of the collectible comic book from the end of 2011 to the end of 2013?

A. 124.28%

B. 140.28%

C. 151.00%

D. 209.72%

$100\%(2.67)(0.84) = 224.28$

increase by 124.28%

Question ID ba0e23b0

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: ba0e23b0

3.13

140 is $p\%$ greater than 10. What is the value of p?

A. $1{,}400$

~~B.~~ $1{,}300$

C. 140

D. 130

$$140 = \left(1 + \frac{p}{100}\right)10$$

$$p = 1{,}300$$

Question ID 2afd3cec

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 2afd3cec

3.14

After 20% of the original number of marbles in a group were removed from the group, 360 marbles remained in the group. How many marbles were removed from the group?

A. 72

B. 90

C. 450

D. $1{,}800$

$0.8X = 360$

$X = 450$

$450(0.2) = 90$ //

Question ID e635aede

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: e635aede

3.15

In 2008, Zinah earned 14% more than in 2007, and in 2009 Zinah earned 4% more than in 2008. If Zinah earned y times as much in 2009 as in 2007, what is the value of y?

A. 0.5600

B. 1.0056

C. 1.1800

D. 1.1856

$P_{2009} = 1.14(1.04)P_{2007}$

$P_{2009} = 1.1856\ P_{2007}$

P_{2009} y

P_{2007}

Question ID 1fbd3b67

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Problem-Solving and Data Analysis	Percentages	■■■

ID: 1fbd3b67

3.16

The number a is 190% greater than the number b. The number b is 80% less than 24. What is the value of a?

A. 9.12

B. 13.92

C. 26.40

D. 36.48

$a = 2.9b$

$b = 0.2(24)$

$= 4.8$

$a = 2.9(4.8)$

$= 13.92$