Question ID bd90f87e

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

ID: bd90f87e

A table of the US minimum wage for 6 different years is shown below.

Year	US minimum wage (dollars per hour)
1960	1.00
1970	1.60
1980	3.10
1990	3.80
2000	5.15
2010	7.25

What was the percent increase of the minimum wage from 1960 to 1970?

A. 30%

B. 60%

C. 62.5%

D. 120%

ID: bd90f87e Answer

Correct Answer: B

Rationale

Choice B is correct. According to the table, the minimum wage in 1960 was $1.00 per hour, and in 1970 it was $1.60 per hour. The percentage change is therefore $100\left(\frac{1.60-1.00}{1.00}\right)=60\%$.

Choice A is incorrect and may result from averaging the two wages before calculating the percentage change. Choice C is incorrect. This is the 1960 wage expressed as a percentage of the 1970 wage, not the percentage change between the two. Choice D is incorrect and may result from a calculation error.

Question Difficulty: Easy

Question ID 8705ecba

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

ID: 8705ecba

The cost of a certain shirt is $20 before a 5% sales tax is added. What is the total cost, including sales tax, to purchase the shirt?

A. $20.05

B. $20.50

C. $21.00

D. $25.00

ID: 8705ecba Answer

Correct Answer: C

Rationale

Choice C is correct. The total cost to purchase the shirt is the $20 cost of the shirt plus the 5% sales tax. The value of the 5% sales tax on the $20 shirt is equivalent to $(0.05)(\$20)$, or $1. Therefore, the total cost to purchase the shirt is $\$20 + \$1$, or $21.

Choice A is incorrect and may result from neglecting to multiply by $20 when finding the value of the sales tax. Choice B is incorrect and may result from dividing by 10, instead of by 100, and then neglecting to multiply by $20 when finding the sales tax. Choice D is incorrect and may result from interpreting the sales tax of 5% as $5.

Question Difficulty: Easy

Question ID 191d167b

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

ID: 191d167b

Last year, 200 students enrolled in an interior design program. This year, the number of students enrolled is 147% of last year's number. How many students are enrolled in the interior design program this year?

A. 247

B. 294

C. 347

D. 394

ID: 191d167b Answer

Correct Answer: B

Rationale

Choice B is correct. It's given that the number of students enrolled in an interior design program this year is 147% of last year's number, which is 200. 147% of 200 can be expressed as $\frac{147}{100}200$, or 1.47200, which is equivalent to 294. Therefore, 294 students are enrolled in the interior design program this year.

Choice A is incorrect and may result from conceptual or calculation errors.

Choice C is incorrect and may result from conceptual or calculation errors.

Choice D is incorrect and may result from conceptual or calculation errors.

Question Difficulty: Easy

Question ID bb7c8186

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

ID: bb7 **ID: bb7c8186 Answer**

Correct Answer: A

What is 23% of 100?

A. 23

B. 46

C. 77

D. 123

Rationale

Choice A is correct. 23% of 100 can be calculated by multiplying $\frac{23}{100}$ by 100, which yields $\frac{23}{100}100$, or 23.

Choice B is incorrect. This is 46%, not 23%, of 100.

Choice C is incorrect. This is 23% less than 100, not 23% of 100.

Choice D is incorrect. This is 23% greater than 100, not 23% of 100.

Question Difficulty: Easy

Question ID 949cd96b

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

ID: 949cd96b

The length of the base of a certain parallelogram is 89% of the height of the parallelogram. Which expression represents the length of the base of the parallelogram, where h is the height of the parallelogram?

A. $89h$

B. $0.089h$

C. $8.9h$

D. $0.89h$

ID: 949cd96b Answer

Correct Answer: D

Rationale

Choice D is correct. It's given that the length of the base of the parallelogram is 89% of the height of the parallelogram. Since h is the height of the parallelogram, it follows that the length of the base of the parallelogram can be represented by the expression $\frac{89}{100}h$, or $0.89h$.

Choice A is incorrect. This expression represents $8{,}900\%$, not 89%, of the height of the parallelogram.

Choice B is incorrect. This expression represents 8.9%, not 89%, of the height of the parallelogram.

Choice C is incorrect. This expression represents 890%, not 89%, of the height of the parallelogram.

Question Difficulty: Easy

Question ID 28c6bd8c

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

ID: 28c6bd8c

Where Do People Get Most of Their Medical Information?

Source	Percent of those surveyed
Doctor	63%
Internet	13%
Magazines/brochures	9%
Pharmacy	6%
Television	2%
Other/none of the above	7%

The table above shows a summary of 1,200 responses to a survey question. Based on the table, how many of those surveyed get most of their medical information from either a doctor or the Internet?

A. 865

B. 887

C. 912

D. 926

ID: 28c6bd8c Answer

Correct Answer: C

Rationale

Choice C is correct. According to the table, 63% of survey respondents get most of their medical information from a doctor and 13% get most of their medical information from the Internet. Therefore, 76% of the 1,200 survey respondents get their information from either a doctor or the Internet, and 76% of 1,200 is 912.

Choices A, B, and D are incorrect. According to the table, 76% of survey respondents get their information from either a doctor or the Internet. Choice A is incorrect because 865 is about 72% (the percent of survey respondents who get most of their medical information from a doctor or from magazines/brochures), not 76%, of 1,200. Choice B is incorrect because 887 is about 74%, not 76%, of 1,200. Choice D is incorrect because 926 is about 77%, not 76%, of 1,200.

Question Difficulty: Easy

Question ID 9c44f828

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

ID: 9c44f828

There are a total of 840 seats in a school auditorium. During an assembly, students occupied 50% of the seats in the auditorium. How many seats did the students occupy during this assembly?

A. 25

B. 50

C. 420

D. 790

ID: 9c44f828 Answer

Correct Answer: C

Rationale

Choice C is correct. It's given that during an assembly, students occupied 50% of the 840 seats in the school auditorium. Therefore, the number of seats that the students occupied during this assembly can be calculated by multiplying the number of seats in the school auditorium by $\frac{50}{100}$. Thus, the students occupied $840\frac{50}{100}$, or 420, seats during this assembly.

Choice A is incorrect. This is approximately 3%, not 50%, of 840.

Choice B is incorrect. This is approximately 6%, not 50%, of 840.

Choice D is incorrect. This is approximately 94%, not 50%, of 840.

Question Difficulty: Easy

Question ID 7ed0d098

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

ID: 7ed0d098

Lani spent 15% of her 8-hour workday in meetings. How many minutes of her workday did she spend in meetings?

A. 1.2

B. 15

C. 48

D. 72

ID: 7ed0d098 Answer

Correct Answer: D

Rationale

Choice D is correct. There are 60 minutes in one hour, so an 8-hour workday has $(60)(8) = 480$ minutes. To calculate 15% of 480, multiply 0.15 by 480: $(0.15)(480) = 72$. Therefore, Lani spent 72 minutes of her workday in meetings.

Choice A is incorrect because 1.2 is 15% of 8, which gives the time Lani spent of her workday in meetings in hours, not minutes. Choices B and C are incorrect and may be the result of computation errors.

Question Difficulty: Easy

Question ID 77cf4fa6

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

ID: 77cf4fa6

There are 170 blocks in a container. Of these blocks, 10% are green. How many blocks in the container are green?

ID: 77cf4fa6 Answer

Correct Answer: 17

Rationale

The correct answer is 17. It's given that there are 170 blocks in a container, and of these blocks, 10% are green. Since 10% can be rewritten as $\frac{10}{100}$, or 0.1, the number of green blocks in the container is 0.1170, or 17.

Question Difficulty: Easy

Question ID 2d31caae

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

ID: 2d31caae

Call Ratings

	1 Star	2 Stars	3 Stars	4 Stars	Total
Employee A	16	49	72	8	145
Employee B	4	10	22	34	70
Employee C	8	56	45	16	125
Employee D	22	42	84	12	160
Total	50	157	223	70	500

A supervisor at a call center reviewed 500 calls taken by four employees and rated the employees' performance on each call on a scale from 1 star to 4 stars. The ratings for each employee are shown in the table above. According to the table, to the nearest whole percent, what percent of Employee A's calls received a rating of 1 star?

A. 3%

B. 11%

C. 16%

D. 32%

ID: 2d31caae Answer

Correct Answer: B

Rationale

Choice B is correct. The percent of Employee A's calls that received a rating of 1 star is the number of Employee A's 1-star calls divided by the total number of Employee A's calls. This quotient, $\frac{16}{145}$, is approximately equal to 0.1103, or 11.03%. To the nearest whole percent, this is 11%.

Choice A is incorrect. This is the percent of all calls taken by Employee A that received a rating of 1 star. Choice C is incorrect and may result from a conceptual error. For example, 16 is the number, not the percent, of calls taken by Employee A that received a rating of 1 star. Choice D is incorrect. This is the percent of all calls that received a rating of 1 star that were taken by Employee A.

Question Difficulty: Easy

Question ID 194ae3b1

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

ID: 194ae3b1

There were approximately 113,000 occupational therapy jobs in the United States in 2012. The Bureau of Labor Statistics has projected that this number will increase by 29% from 2012 to 2022. Of the following, which is closest to the number of occupational therapy jobs the bureau has projected for the United States in 2022?

A. 115,900

B. 116,300

C. 142,000

D. 145,800

ID: 194ae3b1 Answer

Correct Answer: D

Rationale

Choice D is correct. The decimal equivalent of 29% is 0.29. It's given that the 113,000 occupational therapy jobs in the United States in 2012 are projected to increase by 29% by 2022. Increasing 113,000 by 29% can be expressed as $(113{,}000)(1+0.29)$, or $(113{,}000)(1.29)$. Evaluating this expression yields 145,770. The closest number is 145,800 in choice D.

Choice A is incorrect and may result from increasing 113,000 by 2,900 instead of by 29%. Choice B is incorrect and may result from increasing 113,000 by 2.9% instead of by 29%. Choice C is incorrect and may result from increasing 113,000 by 29,000 instead of by 29%.

Question Difficulty: Easy

Question ID a8fabad0

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

ID: a8fabad0

A waiter receives tips from each customer. On average, the tip is 15% of the customer's bill. At this rate, which of the following is closest to the tip the waiter can expect when a customer has a bill that is $78.20?

A. $8.00

B. $10.00

C. $12.00

D. $14.00

ID: a8fabad0 Answer

Correct Answer: C

Rationale

Choice C is correct. If the bill is $78.20, 15% of the bill can be found by multiplying 78.20 by the decimal conversion of 15%, 78.20 × 0.15 = $11.73. The exact amount $11.73 is closest in value to $12.00.

Choices A, B, and D are incorrect and may be the result of errors when calculating 15% of the total $78.20.

Question Difficulty: Easy

Question ID 1c2f50a6

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

ID: 1c2f50a6

During a sale, the original prices of all the items in a clothing store have been reduced by 20%. What is the sale price of a jacket with an original price of $50 ?

A. $12

B. $30

C. $36

D. $40

ID: 1c2f50a6 Answer

Correct Answer: D

Rationale

Choice D is correct. It's given that the original price of the jacket has been reduced by 20%. Multiplying the original price, $50, by 20% gives the amount, in dollars, that the price of the jacket is reduced by: $50 \times .20 = 10$. Subtracting this value from the original price results in the sale price of the jacket: $\$50 - \$10$, or $40.

Choices A, B, and C are incorrect and may result from a conceptual or calculation error.

Question Difficulty: Easy

Question ID 048811bd

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

ID: 048811bd

What is 10% of 370?

A. 27

B. 37

C. 333

D. 360

ID: 048811bd Answer

Correct Answer: B

Rationale

Choice B is correct. 10% of a quantity means $\frac{10}{100}$ times the quantity. Therefore, 10% of 370 can be represented as $\frac{10}{100}370$, which is equivalent to 0.10370, or 37. Therefore, 10% of 370 is 37.

Choice A is incorrect. This is 10% of 270, not 10% of 370.

Choice C is incorrect. This is 90% of 370, not 10% of 370.

Choice D is incorrect. This is 370 - 10, not 10% of 370.

Question Difficulty: Easy

Question ID 6e4a60dd

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

ID: 6e4a60dd

Rita's total bill at a restaurant was $25.00, including tax. If she left a tip of 20% of the total bill, what was the amount of the tip?

A. $3.50

B. $4.00

C. $4.50

D. $5.00

ID: 6e4a60dd Answer

Correct Answer: D

Rationale

Choice D is correct. The total bill was $25.00. The percentage 20% is equivalent to the decimal 0.2. The tip is the product of the percentage and the total bill; therefore, $0.2 \times 25 = 5$, so the tip was $5.00.

Choices A, B, and C are incorrect and may be the result of incorrectly converting the given percentage or a calculation error.

Question Difficulty: Easy

Question ID 41b71b4e

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

ID: 41b71b4e

What number is 20% greater than 60 ?

A. 50

B. 72

C. 75

D. 132

ID: 41b71b4e Answer

Correct Answer: B

Rationale

Choice B is correct. The decimal equivalent of 20% is 0.2. The number that is 20% greater than 60 is also 120% of 60. The decimal equivalent of 120% is 1.2, and $1.2(60) = 72$.

Alternate approach: 10% of 60 is 6, and 20% of 60 is double that amount, or 12. It follows that the number that is 20% greater than 60 is 12 more than 60, or $60 + 12 = 72$.

Choice A is incorrect and may result from dividing, instead of multiplying, 60 by 1.2. Choice C is incorrect because it's 25% greater than 60, rather than 20% greater than 60. Choice D is incorrect and may result from multiplying 60 by 2.2 instead of 1.2.

Question Difficulty: Easy