

Question ID 5e5ce50a

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: 5e5ce50a

The value of z is **1.13** times **100**. The value of z is what percent greater than **100**?

- A. **11.3**
- B. **13**
- C. **130**
- D. **213**

ID: 5e5ce50a Answer

Correct Answer: B

Rationale

Choice B is correct. It’s given that the value of z is 1.13 times 100. This can be written as $z = 1.13(100)$, which is equivalent to $z = 1 + 0.13 (100)$, or $z = 1 + \frac{13}{100}100$. It follows that the value of z is 100% of 100 plus 13% of 100. Therefore, the value of z is 13% greater than 100.

Choice A is incorrect. This gives a value of z that is 1.113, not 1.13, times 100.

Choice C is incorrect. This gives a value of z that is 2.30, not 1.13, times 100.

Choice D is incorrect. This gives a value of z that is 3.13, not 1.13, times 100.

Question Difficulty: Medium

Question ID 53b13005

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: 53b13005

Last year, Cedric had **35** plants in his garden. This year, the number of plants in Cedric’s garden is **60%** greater than the number of plants in his garden last year. How many plants does Cedric have in his garden this year?

ID: 53b13005 Answer

Correct Answer: 56

Rationale

The correct answer is 56. It’s given that Cedric had 35 plants in his garden last year and that the number of plants in Cedric's garden this year is 60% greater than the number of plants in his garden last year. It follows that the number of plants in Cedric’s garden this year is 35 plus 60% of 35, which is equal to $35 + 35 \frac{60}{100}$, or $35 + 350.6$. This expression is equivalent to $35 + 21$, or 56. Therefore, Cedric has 56 plants in his garden this year.

Question Difficulty: Medium

Question ID f73da1c2

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: f73da1c2

The amount of Hanna's bill for a food order was **\$50**. Hanna gave a tip of **20%** of the amount of the bill. What is the amount, in dollars, of the tip Hanna gave?

ID: f73da1c2 Answer

Correct Answer: 10

Rationale

The correct answer is 10. It's given that the amount of Hanna's food order was \$ 50 and that Hanna gave a tip of 20% of the amount of the bill. 20% of 50 can be calculated as $\frac{20}{100}50$, which yields $\frac{1000}{100}$, or 10. Therefore, the amount, in dollars, of the tip Hanna gave is 10.

Question Difficulty: Medium

Question ID 82bc092c

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: 82bc092c

The number of coins in a collection increased from **9** to **90**. What was the percent increase in the number of coins in this collection?

- A. 10%
- B. 81%
- C. 90%
- D. 900%

ID: 82bc092c Answer

Correct Answer: D

Rationale

Choice D is correct. It's given that the number of coins in the collection increased from 9 to 90. It follows that the number of coins in the collection increased by $90 - 9$, or 81. Let $x\%$ represent the percentage that 81 is of 9. The value of x can be found using the proportion $\frac{81}{9} = \frac{x}{100}$, or $9 = \frac{x}{100}$. Multiplying both sides of this equation by 100 yields $900 = x$. Thus, when the number of coins in the collection increased from 9 to 90, the percent increase was 900%.

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

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

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

Question Difficulty: Medium

Question ID 2fc22f88

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: 2fc22f88

Which expression represents the result of increasing a positive quantity w by 43%?

- A. $1.43w$
- B. $0.57w$
- C. $43w$
- D. $0.43w$

ID: 2fc22f88 Answer

Correct Answer: A

Rationale

Choice A is correct. The result of increasing a positive quantity w by $x\%$ can be represented by the expression $1 + \frac{x}{100}w$. Therefore, the result of increasing a positive quantity w by 43% can be found by substituting 43 for x in the expression $1 + \frac{x}{100}w$, which gives $1 + \frac{43}{100}w$, or $1.43w$. Thus, the expression $1.43w$ represents the result of increasing a positive quantity w by 43%.

Choice B is incorrect. This is the result of decreasing a positive quantity w by 43%.

Choice C is incorrect. This is the result of increasing a positive quantity w by 4,200%.

Choice D is incorrect. This is the result of decreasing a positive quantity w by 57%.

Question Difficulty: Medium

Question ID 64b9b4bf

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: 64b9b4bf

What number is 40% greater than 115?

ID: 64b9b4bf Answer

Correct Answer: 161

Rationale

The correct answer is 161. For a number to be 40% greater than 115, it follows that the number is 100 % of 115 + 40 % of 115, which can be written as $\frac{100}{100}115 + \frac{40}{100}115$. This expression is equivalent to $115 + 0.4115$, or 1.4115 , which is equal to 161. Therefore, 161 is 40% greater than 115.

Question Difficulty: Medium

Question ID b1e2590f

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: b1e2590f

432 is 96% of what number?

ID: b1e2590f Answer

Correct Answer: 450

Rationale

The correct answer is 450. Let x represent the number that 432 is 96% of. This can be written as $\frac{96}{100}x = 432$, or $0.96x = 432$. Dividing both sides of this equation by 0.96 yields $x = 450$. Therefore, 432 is 96% of 450.

Question Difficulty: Medium

Question ID 95c6c2a2

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Problem-Solving and Data Analysis	Percentages	

ID: 95c6c2a2

In a group, **40%** of the items are red. Of all the red items in the group, **30%** also have stripes. What percentage of the items in the group are red with stripes?

- A. **10%**
- B. **12%**
- C. **70%**
- D. **75%**

ID: 95c6c2a2 Answer

Correct Answer: B

Rationale

Choice B is correct. It’s given that in a group, 40% of the items are red. It follows that the number of red items in the group can be represented by $0.4x$, where x represents the total number of items in the group. It’s also given that of all the red items in the group, 30% also have stripes. It follows that the number of items in the group that are red and have stripes can be represented by $0.30 \cdot 4x$, or $0.12x$. The expression $0.12x$ represents 12% of x . Since x represents the total number of items in the group, it follows that 12% of the items in the group are red and have stripes.

Choice A is incorrect and may result from subtracting 30% from 40% rather than calculating 30% of 40%.

Choice C is incorrect and may result from adding 30% and 40% rather than calculating 30% of 40%.

Choice D is incorrect and may result from calculating the percentage that 30% is of 40% rather than calculating 30% of 40%.

Question Difficulty: Medium