

Data Science Math Skills

Here's the complete list of exercises you need to deliver:

Week 1

* Building Blocks for Problem Solving - Practice quiz on Sets (3 questions)

* The infinite World of Real Numbers - Practice quiz on the Number Line, including Inequalities (8 questions)

* That Jagged S Symbol - Practice quiz on Simplification Rules and Sigma Notation (6 questions)

* That Jagged S Symbol - Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation (13 questions)

Sets and What They're Good For

Practice quiz on Sets | Coursera

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www.coursera.org/learn/datasciencemathskills/quiz/NYrPt/practice-quiz-on-sets/attempt

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Practice quiz on Sets

Teste para praticar • 15 min

Practice quiz on Sets

NÚMERO TOTAL DE PONTOS 3

1. Let $A = \{1, 3, 5\}$. Is the following statement: $3 \in A$. True or false?

1 ponto

☒ True

☐ False

2. Let $E = \{-1, -2, -3\}$. Compute the cardinality $|E|$ of E :

1 ponto

☒ 3

☐ E

☐ -3

☐ 0

3. Let $A = \{1, 3, 5\}$ and $B = \{3, 5, 10, 11, 14\}$.

1 ponto

Which of the following sets is equal

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The infinite World of Real Numbers

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Practice quiz on the Number Line, including Inequalities

Teste para praticar • 25 min

3. Suppose I tell you that x and y are two real numbers which make the statement $x < y$ true. Which pair of numbers **cannot** be values for x and y ? 1 ponto

○ $x = -1$ and $y = 0$

☐ $x = 1$ and $y = 7.3$

○ $x = -17.3$ and $y = -17.1$

⊙ $x = 5$ and $y = 3.3$

4. Suppose I tell you that w is a real number which makes both of the following statements true: $w > 1$ and $w < 1.2$. Which of the following numbers could be w ?

④ $w = 1.05$

○ $w = 1.2$

○ $w = 0$

○ $w = 11$

← Practice quiz on the Number Line, including Inequalities

Teste para praticar • 25 min

5. Suppose that x and y are two real numbers which satisfy $x + 3 = 4y + 1$. Which of the following statements are false?

1 ponto

- ☐ $x + 2 = 4y$
- ☐ $x = 4y - 2$
- ☐ $2x + 6 = 8y + 2$
- ☒ $x = 4y$

6. Which of the following real numbers is in the open interval $(2, 3)$?

1 ponto

- ☒ 2.1
- ☐ 3
- ☐ 2
- ☐ 1

7. Which of the following real numbers are in the open ray $(3.1, \infty)$?

1 ponto

That Jagged S Symbol

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Practice quiz on Simplificati

www.coursera.org/learn/datasciencemathskills/quiz/EV2Rr/practice-quiz-on-simplification-rules-and-sigma-notation/attempt

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Practice quiz on Simplification Rules and Sigma Notation

Teste para praticar • 20 min

Practice quiz on Simplification Rules and Sigma Notation

NÚMERO TOTAL DE PONTOS 6

1. Which of the numbers below is equal to the following summation: $\sum_{i=1}^3 i^2$?

1 ponto

☐ 30

☒ 14

☐ 1

☐ 9

2. Suppose that $A = \sum_{k=1}^{100} k^4$ and $B = \sum_{j=1}^{100} j^4$

1 ponto

Which of the following statements is true?

☒ $A = B$

☐ $B > A$

☐ $A > B$

☐ $A < B$

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Practice quiz on Simplification Rules and Sigma Notation

Teste para praticar • 20 min

2. Suppose that $A = \sum_{k=1}^{100} k^4$ and $B = \sum_{j=1}^{100} j^4$

1 ponto

Which of the following statements is true?

- ☒ $A = B$
- ☐ $B > A$
- ☐ There is not enough information to do the problem
- ☐ $A > B$

3. Which of the numbers below is equal to the summation $\sum_{i=1}^{10} 7$?

1 ponto

- ☒ 70
- ☐ 7
- ☐ 55
- ☐ 0

4. Suppose that $X = \sum_{i=1}^5 i^3$ and $Y = \sum_{j=1}^5 j^4$

1 ponto

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Practice quiz on Simplification Rules and Sigma Notation

Teste para praticar • 20 min

4. Suppose that $X = \sum_{i=1}^5 i^3$ and $Y = \sum_{i=1}^5 i^4$.

1 ponto

Which of the following expressions is equal to the summation $\sum_{i=1}^5 (2i^3 + 5i^4)$?

☐ 7

☐ 3375

☐ $X + Y$

☒ $2X + 5Y$

5. Which of the following numbers is the mean μ_Z of the set $Z = \{-2, 4, 7\}$?

1 ponto

☐ $\frac{13}{3}$

☒ 3

☐ 9

☐ 4

6. Suppose the set X has five numbers in it: $X = \{m, m, m, m, m\}$. Which of the following expressions

1 ponto

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Practice quiz on Simplification Rules and Sigma Notation

Teste para praticar • 20 min

6. Suppose the set X has five numbers in it: $X = \{x_1, x_2, x_3, x_4, x_5\}$. Which of the following expression represents the mean of the set X ? 1 ponto

$$\frac{1}{5} \left[\sum_{i=1}^5 x_i \right]$$

$$\frac{1}{N} \left[\sum_{i=1}^N x_i \right]$$

$$\bigcirc \sum_{i=1}^5 x_i$$

$$\frac{1}{5} \left[\sum_{i=1}^5 (x_i - \mu_X)^2 \right]$$

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That Jagged S Symbol

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Graded quiz on Sets, Num

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Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation

Teste valendo nota • 35 min

Vencimento Mar 21, 11:59 PM PDT

3. How many real numbers are there between the integers 1 and 4?

1 ponto

☐ None

☐ 4

☒ Infinitely many

☐ 2

4. Suppose I tell you that x and y are two real numbers which make the statement $x \geq y$ true. Which pair of numbers cannot be values for x and y ?

1 ponto

☐ $x = 2$ and $y = 1$

☐ $x = 10$ and $y = 10$

☒ $x = -1$ and $y = 0$

☐ $x = 5$ and $y = 3.3$

5. Suppose that z and w are two positive numbers with $z < w$. Which of the following inequalities is false?

1 ponto

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Graded quiz on Sets, Num

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Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation

Teste valendo nota • 35 min

Vencimento Mar 21, 11:59 PM PDT

5. Suppose that z and w are two positive numbers with $z < w$. Which of the following inequalities is false?

1 ponto

☐ $z + 3 < w + 3$

☐ $-z > -w$

☒ $-5z < -5w$

☐ $w - 7 > z - 7$

6. Find the set of all x which solve the inequality $-2x + 5 \leq 7$

1 ponto

☐ $x \geq -6$

☐ $x \leq -1$

☒ $x \geq -1$

☐ $x = -1$

7. Which of the following real numbers is not in the closed interval $[2, 3]$

1 ponto

☒ 1

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Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation

Teste valendo nota • 35 min

Vencimento Mar 21, 11:59 PM PDT

7. Which of the following real numbers is not in the closed interval $[2, 3]$

1 ponto

☒ 1

☐ 2.1

☐ 2

☐ 3

8. Which of the following intervals represents the set of all solutions to:

1 ponto

$-5 \leq x + 2 < 10$

☐ $(7, 8)$

☐ $[-5, 10)$

☒ $[-7, 8)$

☐ $[-7, 8]$

9. Which of the numbers below is equal to the following summation: $\sum_{k=2}^5 2k$

1 ponto

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Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation

Teste valendo nota • 35 min

Vencimento Mar 21, 11:59 PM PDT

9. Which of the numbers below is equal to the following summation: $\sum_{k=2}^5 2k$?

1 ponto

☐ 10

☒ 28

☐ 4

☐ 14

10. Suppose we already know that $\sum_{k=1}^{20} k = 210$. Which of the numbers below is equal to $\sum_{k=1}^{20} 2k$?

1 ponto

☐ 40

☒ 420

☐ 210

☐ 2

11. Which of the numbers below is equal to the summation $\sum_{i=2}^{10} 7$?

1 ponto

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Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation

Teste valendo nota • 35 min

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11. Which of the numbers below is equal to the summation $\sum_{i=2}^{10} 7$?

1 ponto

- ☐ 48
☒ 63
☐ 7
☐ 70

12. Which of the following numbers is the variance of the set $Z = \{-2, 4, 7\}$?

1 ponto

- ☐ $\sqrt{14}$
- ☐ 69
- ☐ 42
- ☒ 14

13. Which of the following sets does *not* have zero variance? (hint: don't do any calculation here, just think!)

1 ponto

- $\{1, 1, 1, 1\}$

14

1 ponto

- ☐ $\{1, 1, 1, 1\}$
- ☐ $\{0, 0, 0, 0, 0, 0, 0\}$
- ☒ $\{2, 5, 9, 13\}$
- ☐ $\{5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5\}$

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