Proportional Reasoning

Activity 1: Which Two Rows?

Question Group 1 Question 1

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A doubling of the value of x results in a doubling of the value of y.

Row	x	У
А	2	4
В	4	8
С	6	12
D	8	16
E	12	24

Question 2

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A tripling of the value of x results in a tripling of the value of y.

Row	х	У
А	2	6
В	4	12
С	6	18
D	8	24
E	12	36

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A quadrupling of the value of x results in a quadrupling of the value of y.

Row	х	У
А	2	8
В	3	12
С	6	24
D	8	32
E	12	48

Question Group 2 Question 4

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A doubling of the value of x results in a halving of the value of y.

Row	X	У
А	2	12
В	3	8
С	4	6
D	6	4
E	8	3

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A tripling of the value of x results in the value of y decreasing by a factor of three.

Row	x	У
А	2	18
В	3	12
С	4	9
D	6	6
Е	12	3

Question 6

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A quadrupling of the value of x results in the value of y decreasing by a factor of four.

Row	x	У
A	2	24
В	4	12
С	6	8
D	8	6
E	16	3

Question Group 3 Question 7

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A doubling of the value of x results in a quadrupling of the value of y.

Row	x	У
А	2	8
В	3	18
С	4	32
D	6	72
E	8	128

Question 8

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A tripling of the value of x results in the value of y increasing by a factor of nine.

Row	x	У
А	2	2
В	4	8
С	6	18
D	8	32
Е	12	72

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A quadrupling of the value of x results in the value of y increasing by a factor of 16.

Row	x	У
A	2	1
В	4	4
С	6	9
D	8	16
E	12	36

Question Group 4 Question 10

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A doubling of the value of x results in a doubling of the value of y.

Row	x	У
A	1	2
В	3	6
С	4	8
D	8	16
E	12	24

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A tripling of the value of x results in a tripling of the value of y.

Row	x	У
A	1	4
В	3	12
С	4	16
D	9	36
E	12	48

Question 12

Observe the data at the right. Which two rows show the following pattern? Select all that apply.

A quadrupling of the value of x results in a quadrupling of the value of y.

Row	х	У
A	2	3
В	4	6
С	6	9
D	8	12
E	10	15

Activity 2: Predict the Value

Question Group 5 Question 13

The variables x and y have a linear relationship. Doubling the value of X causes the value of y to double. When x has a value of 2, y has a value of 6. What will be the value of y when x has a value of 4?



Question 13

The variables x and y have a linear relationship. Tripling the value of X causes the value of y to triple. When x has a value of 2, y has a value of 6. What will be the value of y when x has a value of 6?



Question 13

The variables x and y have a linear relationship. Quadrupling the value of X causes the value of y to quadruple. When x has a value of 2, y has a value of 6. What will be the value of y when x has a value of 8?



Question Group 6 Question 16

The variables x and y have an inverse relationship. Doubling the value of X causes the value of y to halve. When x has a value of 2, y has a value of 24. What will be the value of y when x has a value of 4?



Question 17

The variables x and y have an inverse relationship. Tripling the value of X causes the value of y to decrease by a factor of one-third. When x has a value of 2, y has a value of 24. What will be the value of y when x has a value of 6?



Question 18

The variables x and y have an inverse relationship. Quadrupling the value of X causes the value of y to decrease by a factor of one-fourth. When x has a value of 2, y has a value of 24. What will be the value of y when x has a value of 8?



Question Group 7 Question 19

The variables x and y have a quadratic relationship. Doubling the value of X causes the value of y to quadruple. When x has a value of 3, y has a value of 2. What will be the value of y when x has a value of 6?



Question 20

The variables x and y have a quadratic relationship. Tripling the value of X causes the value of y to increase by a factor of nine. When x has a value of 3, y has a value of 2. What will be the value of y when x has a value of 9?



Question 21

The variables x and y have a quadratic relationship. Quadrupling the value of X causes the value of y to increase by a factor of 16. When x has a value of 3, y has a value of 2. What will be the value of y when x has a value of 12?



Question Group 8 Question 22

The variables x and y have a linear relationship. Doubling the value of X causes the value of y to double. When x has a value of 3, y has a value of 5. What will be the value of y when x has a value of 6?



Question 23

The variables x and y have a linear relationship. Tripling the value of X causes the value of y to triple. When x has a value of 3, y has a value of 5. What will be the value of y when x has a value of 9?



Question 24

The variables x and y have a linear relationship. Quadrupling the value of X causes the value of y to quadruple. When x has a value of 3, y has a value of 5. What will be the value of y when x has a value of 12?



Activity 3: Extrapolate Question Group 9 Question 25

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Doubling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 16?

Question 26

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Tripling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 18?

Question 27

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Quadrupling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 24?

Row	x	У
А	2	4
В	4	8
С	6	12
D	8	16
E	12	24

Row	x	У
А	2	6
В	4	12
С	6	18
D	8	24
Е	12	36

Row	x	У
А	2	8
В	3	12
С	6	24
D	8	32
E	12	48

Question Group 10 Question 28

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Doubling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 12?

Row	x	У
A	2	12
В	3	8
С	4	6
D	6	4
E	8	3

Row	x	у
А	2	18
В	3	12
С	4	9
D	6	6
E	12	3

Row	x	У
А	2	24
В	4	12
С	6	8
D	8	6
E	16	3

Question 29

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Tripling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 18?

Question 30

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Quadrupling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 24?

Question Group 11 Question 31

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Doubling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 12?

Question 32

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Tripling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 24?

Question 33

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Quadrupling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 24?

Row	x	У
A	2	8
В	3	18
С	4	32
D	6	72
E	8	128

Row	х	У
А	2	2
В	4	8
С	6	18
D	8	32
Е	12	72

Row	x	У
А	2	1
В	4	4
С	6	9
D	8	16
E	12	36

Question Group 12 Question 34

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Doubling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 24?

Question 35

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Tripling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 36?

Question 36

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Quadrupling the value of X causes the value of Y to ...

What would be the value of Y when the value of x is 32?

Row	x	У
A	1	2
В	3	6
С	4	8
D	8	16
E	12	24

Row	x	У
А	1	4
В	3	12
С	4	16
D	9	36
Е	12	48

Row	x	У
А	2	3
В	4	6
С	6	9
D	8	12
E	10	15

Question Group 13 Question 37

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Doubling the value of X causes the value of Y to ...

What would be the value of Y for a value of X of 32?

Row	x	У
А	1	32
В	2	16
С	4	8
D	8	4
E	16	2

Row	x	У
А	2	30
В	3	20
С	4	15
D	6	10
Е	8	7.5

Row	x	У
A	1	32
В	2	16
С	4	8
D	8	4
E	16	2

Question 38

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Tripling the value of X causes the value of Y to ...

What would be the value of Y for a value of X of 12?

Question 39

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Quadrupling the value of X causes the value of Y to ...

What would be the value of Y for a value of X of 32?

Question Group 14 Question 40

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Doubling the value of X causes the value of Y to ...

What would be the value of Y for a value of X of 12?

Row	х	У
А	2	3
В	4	12
С	6	27
D	8	48
Е	10	75

Row	x	У
А	2	3
В	4	12
С	6	27
D	8	48
Е	12	108

Row	x	У
А	2	5
В	4	20
С	6	45
D	10	125
E	12	180

Question 41

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Tripling the value of X causes the value of Y to ...

What would be the value of Y for a value of X of 18?

Question 42

Observe the data at the right. What type of relationship describes this data?

Complete the following statement so that it is consistent with the data:

Quadrupling the value of X causes the value of Y to ...

What would be the value of Y for a value of X of 16?