

Reasoning and Problem Solving

Step 3: Common Factors

National Curriculum Objectives:

Mathematics Year 5: (5C5a) [Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers](#)

Mathematics Year 5: (5C8a) [Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Identify the pair of numbers that share the most common factors. Includes the common factors 1, 2, 3, 5 and 10.

Expected Identify the pair of numbers that share the most common factors. Includes the common factors 1 – 10.

Greater Depth Identify the pair of numbers that share the most common factors. Includes the common factors 1 – 12.

Questions 2, 5 and 8 (Reasoning)

Developing Prove if a statement about common factors is true or false. Includes the common factors 1, 2, 3, 5 and 10.

Expected Prove if a statement about common factors is true or false. Includes the common factors 1 – 10.

Greater Depth Prove if a statement about common factors is true or false. Includes the common factors 1 – 12.

Questions 3, 6 and 9 (Reasoning)

Developing Identify and explain the mistake made in a Venn diagram. Includes the factors 1, 2, 3, 5 and 10.

Expected Identify and explain the mistake made in a Venn diagram. Includes the factors 1 – 10.

Greater Depth Identify and explain the mistake made in a Venn diagram. Includes the factors 1 – 12.

[More resources](#) which follow the same small steps as White Rose.

Did you like this resource? Don't forget to [review](#) it on our website.

Common Factors

Common Factors

1a. Circle the pair of numbers that share the most number of common factors.

6 and 20

8 and 14

10 and 15

20 and 30

9 and 12



PS

1b. Circle the pair of numbers that share the most number of common factors.

15 and 20

5 and 12

8 and 10

12 and 14

10 and 20



PS

2a. Carly says,



The number 1 is the largest common factor of 14 and 18.

Is Carly correct? Prove it.



R

2b. Dean says,



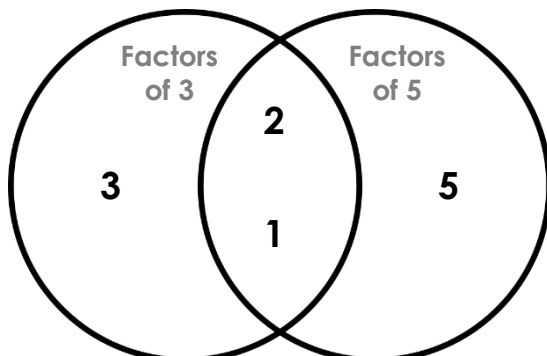
The number 5 is the largest common factor of 12 and 15.

Is Dean correct? Prove it.



R

3a. Ivan has sorted some factors into a Venn diagram.

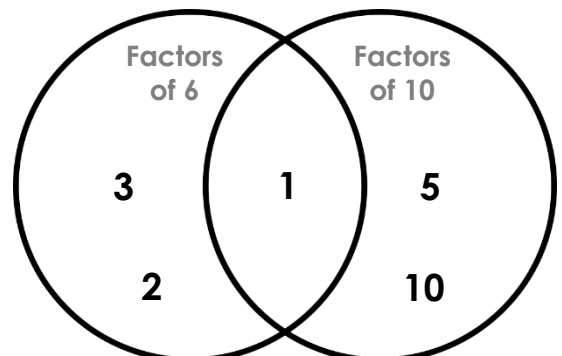


Explain the mistake that he has made.



R

3b. Maisie has sorted some factors into a Venn diagram.



Explain the mistake that she has made.



R

Common Factors

4a. Circle the pair of numbers that share the most number of common factors.

9 and 30

12 and 18

10 and 25

23 and 31

14 and 21



PS

Common Factors

4b. Circle the pair of numbers that share the most number of common factors.

16 and 24

18 and 27

9 and 21

28 and 49

25 and 55



PS

5a. Ella says,



The number 4 is the largest common factor of 16 and 24.

Is Ella correct? Prove it.



R

5b. Benji says,



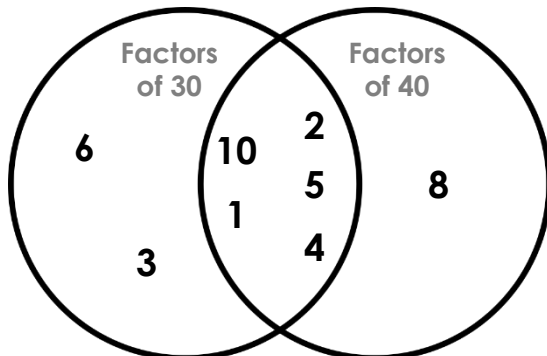
The number 3 is the largest common factor of 54 and 63.

Is Benji correct? Prove it.



R

6a. Ashton has sorted some factors into a Venn diagram.

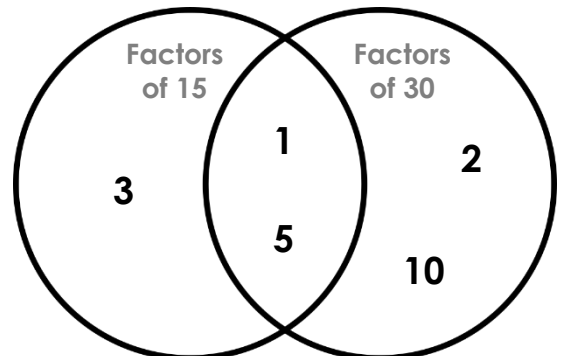


Explain the mistake that he has made.



R

6b. Daisy has sorted some factors into a Venn diagram.



Explain the mistake that she has made.



R

Common Factors

7a. Circle the pair of numbers that share the most number of common factors.

22 and 33

50 and 60

36 and 56

40 and 46

72 and 99



PS

Common Factors

7b. Circle the pair of numbers that share the most number of common factors.

11 and 88

18 and 45

44 and 55

12 and 96

60 and 70



PS

8a. Jess says,



The number 7 is the largest common factor of 24 and 84.

Is Jess correct? Prove it.



R

8b. Scott says,



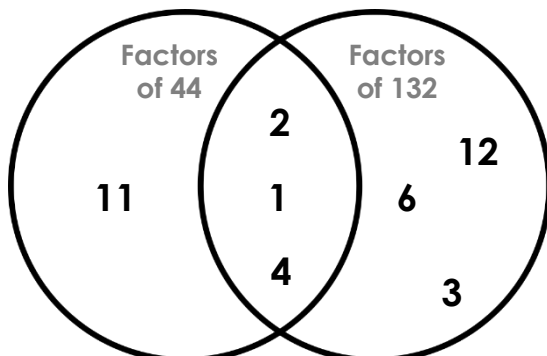
The number 1 is the largest common factor of 11 and 121.

Is Scott correct? Prove it.



R

9a. Jordan has sorted some factors into a Venn diagram.

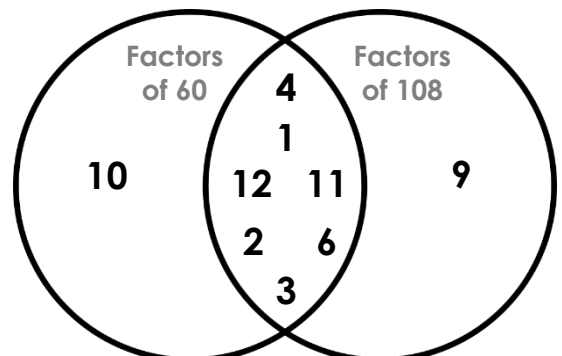


Explain the mistake that he has made.



R

9b. Priya has sorted some factors into a Venn diagram.



Explain the mistake that she has made.



R

Reasoning and Problem Solving

Common Factors

Developing

1a. 20 and 30

2a. Carly is not correct. The number 2 is the largest common factor of 14 and 18.

3a. 2 is not a factor of 3 or 5 so it should not be in the Venn diagram.

Expected

4a. 12 and 18

5a. Ella is not correct. The number 8 is the largest common factor of 16 and 24.

6a. 4 is not a factor of 30 so it should not be in the middle of the Venn diagram. It should only be listed as a factor of 40.

Greater Depth

7a. 50 and 60

8a. Jess is not correct. The number 7 is not a factor of 24. The number 12 is the largest common factor of 24 and 84.

9a. 11 is a factor of 44 and 132 so it should be in the middle of the Venn diagram.

Reasoning and Problem Solving

Common Factors

Developing

1b. 10 and 20

2b. Dean is not correct. The number 5 is not a factor of 12. The largest common factor of 12 and 15 is 3.

3b. 2 is a factor of 6 and 10 so it should be in the middle of the Venn diagram.

Expected

4b. 16 and 24

5b. Benji is not correct. The number 9 is the largest common factor of 54 and 63.

6b. 3 is a factor of 15 and 30 so it should be in the middle of the Venn diagram.

Greater Depth

7b. 12 and 96

8b. Scott is not correct. The number 11 is the largest common factor of 11 and 121.

9b. 11 is not a factor of 60 or 108 so it should not be in the Venn diagram.