N4a Factors and HCFs

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Alpha Exercise 1

List all the factors of each of these numbers:

1) 1: 1

2) 2: 1 2

3) 3: 1 3

4) 4: 1 2 4

5) 8: 1 2 4 8

6) 15: 1 3 5 15

Alpha Exercise 2

List all the factors of each of these numbers:

1) 10: 1 2 5 10

2) 6: 1 2 3 6

3) 9: 1 3 9

4) 17: 1 17

5) 12: 1 2 3 4 6 12

6) 24: 1 2 3 4 6 8 12 24

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Beta Exercise 1

List all the factors of each of these numbers:

1) 36: 1 2 3 4 6 9 12 18 36

2) 45: 1 3 5 9 15 45

3) 57: 1 3 19 57

4) 43: 1 43

5) 39: 1 3 13 39

6) 84: 1 2 3 4 6 7 12 14 21 28 42 84

Beta Exercise 2

List all the factors of each of these numbers:

1) 18 1, 18, 2, 9, 3, 6

2) 20 1, 20, 2, 10, 4, 5

3) 27 1, 27, 3, 9

4) 75 1, 75, 3, 25, 5, 15

5) 63 1, 63, 3, 21, 7, 9

6) 54 1, 54, 2, 27, 3, 18, 6, 9

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Gamma Exercise 1

Find the highest common factor of each of these pairs of numbers:

1) 4 and 18

4 : 1, 4, 2

18 : 1, 18, 2, 9, 3, 6

HCF = 2

2) 15 and 20

15 : 1, 15, 3, 5

20 : 1, 20, 2, 10, 4, 5

HCF = 5

3) 9 and 27

9 : 1, 9, 3

27 : 1, 27, 3, 9

HCF = 9

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Gamma Exercise 1 (contd.)

Find the highest common factor of each of these pairs of numbers:

1) 50 and 75

50 : 1, 50 , 2, 25, 5, 10

75 : 1, 75, 3, 25, 5, 15

HCF = 25

2) 18 and 63

18 : 1, 18, 2, 9, 3, 6

63 : 1, 63, 3, 21, 7, 9

HCF = 9

3) 54 and 90

54 : 1, 54, 2, 27, 3, 18, 6, 9

90 : 1, 90, 2, 45, 3, 30, 5, 18, 6, 15, 9, 10

HCF = 18

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Gamma Exercise 2

Find the highest common factor of each of these sets of numbers:

1) 3 and 14

3: 1, 3

14: 1, 14, 2, 7

HCF = 1

2) 25 and 15

25: 1, 25, 5

15: 1, 15, 3, 5

HCF = 15

3) 21, 35 and 42

21: 1, 21, 3, 7

35: 1, 35, 5, 7

42: 1, 42, 2, 21, 3, 14, 6, 7

HCF = 7

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Gamma Exercise 2 (contd.)

Find the highest common factor of each of these sets of numbers:

4) 55 and 77

55: 1, 55, 5, 11

77: 1, 77, 7, 11

HCF = 11

5) 10, 15 and 25

10: 1, 10, 2, 5

15: 1, 15, 3, 5

25: 1, 25, 5

HCF = 5

6) 210 and 525

210: 1, 210, 2, 105, 3, 70, 5, 42, 6, 35, 7, 30, 10, 21, 14, 15

525: 1, 525, 3, 175, 5, 105, 7, 75, 15, 35, 21, 25

HCF = 105

N4a Factors and HCFs

Explain the mistake

Sophia writes:

28 is a factor of 7 because 7 goes 4 times into 28.

Sophia's sentence is incorrect. How would you correct it?

7 is a factor of 28 because 7 goes 4 times into 28.

Exam-style question 1

(a) Write all the factors of 56.

1, 56 , 2, 28, 4, 14, 7, 8

(b) Find the highest common factor of 56 and 28.

28

(c) Find the highest common factor of 56, 28 and 21.

Factors of 28 : 1, 28, 2, 14, 4, 7

21 : 1, 21, 3, 7

HCF of 56, 28 and 21 = 7

Exam-style question 2

The highest common factor of 42 and 105 is 21.

Write $\frac{42}{105}$ as a fraction in its simplest form.

$$\frac{42}{105} = \frac{2 \times 21}{5 \times 21} = \frac{2}{5}$$