Worksheet

04/16/2019

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Problem quickname: 4978

<u>1)</u>

Find the value requested, the greatest common divisor (gcd) or the least common multiple (lcm).

a) What is the gcd of 56 and 84? It is 28, because $D_{56} = \{1,2,4,7,8,14,28,56\}$, $D_{84} = \{1,2,3,4,6,7,12,14,21,28,42,84\}$. The number 28 is the greatest number that is in both sets of divisors.

b) The lcm of 2 and 52 is 52, because when looking at the multiples we see: Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52$; Multiples of 52: 52. The number 52 is the first multiple shared by both numbers.

c) What is the gcd of 66 and 88? It is 22, because $D_{66} = \{1,2,3,6,11,22,33,66\}$, $D_{88} = \{1,2,4,8,11,22,44,88\}$. The number 22 is the greatest number that is in both sets of divisors.

d) The lcm of 6 and 7 is 42, because when looking at the multiples we see: Multiples of 6: $6, 12, 18, 24, 30, 36, 42$; Multiples of 7: $7, 14, 21, 28, 35, 42$. The number 42 is the first multiple shared by both numbers.

e) The lcm of 4 and 40 is 40, because when looking at the multiples we see: Multiples of 4: $4, 8, 12, 16, 20, 24, 28, 32, 36, 40$; Multiples of 40: 40. The number 40 is the first multiple shared by both numbers.

f) The lcm of 2 and 60 is 60, because when looking at the multiples we see: Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60$; Multiples of 60: 60. The number 60 is the first multiple shared by both numbers.

g) What is the gcd of 44 and 66? It is 22, because $D_{44} = \{1,2,4,11,22,44\}$, $D_{66} = \{1,2,3,6,11,22,33,66\}$. The number 22 is the greatest number that is in both sets of divisors.

h) The lcm of 2 and 56 is 56, because when looking at the multiples we see: Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56$; Multiples of 56: 56. The number 56 is the first multiple shared by both numbers.

<u>2)</u>

Find the value requested.

   a) What is the gcd of 54 and 81? It is 27, because $D_{54} = \{1,2,3,6,9,18,27,54\}$, $D_{81} = \{1,3,9,27,81\}$. The number 27 is the greatest number that is in both sets of divisors.

   b) What is the gcd of 63 and 84? It is 21, because $D_{63} = \{1,3,7,9,21,63\}$, $D_{84} = \{1,2,3,4,6,7,12,14,21,28,42,84\}$. The number 21 is the greatest number that is in both sets of divisors.

   c) What is the gcd of 64 and 96? It is 32, because $D_{64} = \{1,2,4,8,16,32,64\}$, $D_{96} = \{1,2,3,4,6,8,12,16,24,32,48,96\}$. The number 32 is the greatest number that is in both sets of divisors.

   d) What is the gcd of 60 and 90? It is 30, because
$D_{60} = \{1,2,3,4,5,6,10,12,15,20,30,60\}$,
$D_{90} = \{1,2,3,5,6,9,10,15,18,30,45,90\}$. The number 30 is the greatest number that is in both sets of divisors.

   e) What is the gcd of 66 and 99? It is 33, because $D_{66} = \{1,2,3,6,11,22,33,66\}$, $D_{99} = \{1,3,9,11,33,99\}$. The number 33 is the greatest number that is in both sets of divisors.

   f) What is the gcd of 63 and 84? It is 21, because $D_{63} = \{1,3,7,9,21,63\}$, $D_{84} = \{1,2,3,4,6,7,12,14,21,28,42,84\}$. The number 21 is the greatest number that is in both sets of divisors.

   g) What is the gcd of 46 and 92? It is 46, because $D_{46} = \{1,2,23,46\}$, $D_{92} = \{1,2,4,23,46,92\}$. The number 46 is the greatest number that is in both sets of divisors.

   h) What is the gcd of 64 and 96? It is 32, because $D_{64} = \{1,2,4,8,16,32,64\}$, $D_{96} = \{1,2,3,4,6,8,12,16,24,32,48,96\}$. The number 32 is the greatest number that is in both sets of divisors.

<u>3)</u>

Find the value requested, the least common multiple (lcm).

   a) The lcm of 2 and 144 is 144, because when looking at the multiples we see: Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144$; Multiples of 144: 144. The number 144 is the first multiple shared by both numbers.

   b) The lcm of 25 and 35 is 175, because when looking at the multiples we see: Multiples of 25: $25, 50, 75, 100, 125, 150, 175$; Multiples of 35: $35, 70, 105, 140, 175$. The number 175 is the first multiple shared by both numbers.

c) The lcm of 9 and 33 is 99, because when looking at the multiples we see: Multiples of 9: $9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99$; Multiples of 33: $33, 66, 99$. The number 99 is the first multiple shared by both numbers.

d) The lcm of 9 and 81 is 81, because when looking at the multiples we see: Multiples of 9: $9, 18, 27, 36, 45, 54, 63, 72, 81$; Multiples of 81: 81. The number 81 is the first multiple shared by both numbers.

e) The lcm of 11 and 15 is 165, because when looking at the multiples we see: Multiples of 11: $11, 22, 33, 44, 55, 66, 77, 88, 99, 110, 121, 132, 143, 154, 165$; Multiples of 15: $15, 30, 45, 60, 75, 90, 105, 120, 135, 150, 165$. The number 165 is the first multiple shared by both numbers.

f) The lcm of 14 and 49 is 98, because when looking at the multiples we see: Multiples of 14: $14, 28, 42, 56, 70, 84, 98$; Multiples of 49: $49, 98$. The number 98 is the first multiple shared by both numbers.

g) The lcm of 12 and 22 is 132, because when looking at the multiples we see: Multiples of 12: $12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132$; Multiples of 22: $22, 44, 66, 88, 110, 132$. The number 132 is the first multiple shared by both numbers.

h) The lcm of 7 and 22 is 154, because when looking at the multiples we see: Multiples of 7: $7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98, 105, 112, 119, 126, 133, 140, 147, 154$; Multiples of 22: $22, 44, 66, 88, 110, 132, 154$. The number 154 is the first multiple shared by both numbers.

4)

Find the value requested.

a) The lcm of 2 and 80 is 80, because when looking at the multiples we see: Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80$; Multiples of 80: 80. The number 80 is the first multiple shared by both numbers.

b) What is the gcd of 54 and 81? It is 27, because $D_{54} = \{1,2,3,6,9,18,27,54\}$, $D_{81} = \{1,3,9,27,81\}$. The number 27 is the greatest number that is in both sets of divisors.

c) The lcm of 2 and 88 is 88, because when looking at the multiples we see: Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88$; Multiples of 88: 88. The number 88 is the first multiple shared by both numbers.

d) What is the gcd of 72 and 96? It is 24, because $D_{72} = \{1,2,3,4,6,8,9,12,18,24,36,72\}$, $D_{96} = \{1,2,3,4,6,8,12,16,24,32,48,96\}$. The number 24 is the greatest number that is in both sets of divisors.

e) The lcm of 4 and 25 is 100, because when looking at the multiples we see:
Multiples of 4: $4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76,$
$80, 84, 88, 92, 96, 100$; Multiples of 25: $25, 50, 75, 100$. The number 100 is the
first multiple shared by both numbers.

f) The lcm of 6 and 72 is 72, because when looking at the multiples we see:
Multiples of 6: $6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72$; Multiples of 72: 72. The
number 72 is the first multiple shared by both numbers.

g) The lcm of 4 and 23 is 92, because when looking at the multiples we see:
Multiples of 4: $4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76,$
$80, 84, 88, 92$; Multiples of 23: $23, 46, 69, 92$. The number 92 is the first multiple
shared by both numbers.

h) The lcm of 7 and 98 is 98, because when looking at the multiples we see:
Multiples of 7: $7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98$; Multiples of 98:
98. The number 98 is the first multiple shared by both numbers.

i) What is the gcd of 60 and 90? It is 30, because
$D_{60} = \{1,2,3,4,5,6,10,12,15,20,30,60\}$,
$D_{90} = \{1,2,3,5,6,9,10,15,18,30,45,90\}$. The number 30 is the greatest number
that is in both sets of divisors.

j) The lcm of 2 and 40 is 40, because when looking at the multiples we see:
Multiples of 2: $2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40$;
Multiples of 40: 40. The number 40 is the first multiple shared by both numbers.

Good Luck!