

Name Solutions

1. (5 points) Use any method to evaluate the following. For parts (d) and (e) you do not need to simplify your answers.

(a) $GCF(18, 10)$

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

factors of 10: 1, 2, 5, 10

$$GCF(18, 10) = 2$$

(b) $LCM(18, 10)$

(positive) multiples of 18: 18, 36, 54, 72, 90, 108, ...

(positive) multiples of 10: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, ...

$$LCM(18, 10) = 90$$

(c) $GCF(30, 222444555)$

factors of 30: 1, 2, 3, 5, 6, 10, 15, 30

we see that 222444555 is divisible by 3 and 5 but not 2.

$$\text{Thus } GCF(30, 222444555) = 15$$

(d) $GCF(3 \times 5^6 \times 7^8, 3^4 \times 7^5)$

$$3 \times 7^5$$

(e) $LCM(3 \times 5^6 \times 7^8, 3^4 \times 7^5)$

$$3^4 \times 5^6 \times 7^8$$

2. (2 points) If the numbers p and q are each prime with $p < q$, then what is the value of $LCM(p, q)$?

(a) 0

(b) 1

(c) p

(d) q

(e) $p \times q$

(f) $p + q$

3. (3 points) It takes Elizabeth 15 minutes to walk around a circular track. It takes Kathryn 12 minutes to walk around the same track. If they both start at the same place and the same time and go in the same direction, after how many minutes will they meet again at the starting place?

After they begin,
Each is at the starting place at
the following times.

Elizabeth | 15, 30, 45, (60), 75, ...

Kathryn | 12, 24, 36, 48, (60), 72, ...

(60 minutes)

we used $LCM(15, 12) = 60$