Robert (Robbie) Knowles MATH 135 Fall 2020: WA06

Q01. To start we will use EEA to find x,y and $d = gcd(2996, 1520)$

x	y	r	q
1	0	2996	0
0	1	1520	0
1	-1	1476	1
-1	2	44	1
34	-67	-24	33
-35	69	20	1
69	-136	-4	1
-380	749	0	5

According to EEA, the last second row will provide the x,y and d. in other words this means that $x = 69$, $y = -136$ and $d = gcd(2996, 1520) = 4$. Plugging this the original equation we find that:

$$2996x + 1520y = \gcd(2996, 1520)$$
$$2996x + 1520y = d$$
$$2996 * (69) + 1520 * (-136) = 4$$
$$4 = 4$$

Therefore $x = 69$, $y = -136$ and $d = gcd(2996, 1520) = 4$.