Ejercicios Algoritmo de Euclides

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Para cada uno de los siguientes a y n encuentre el cociente y el resto de dividir a sobre y n y escriba la ecuación $a = qn + r$.

1. $a = 59, n = 7$

$$r = a - qn$$
$$56 < 59 < 63$$
$$7 * 8 < 59 < 7 * 9$$
$$8 < \frac{59}{7} < 9$$
$$r = 59 - (8 * 7) = 3$$
$$59 = 8 * 7 + 3$$

2. $a = 84, n = 12$

$$72 < 84 < 96$$
$$12 * 6 < 12 * 7 < 12 * 8$$
$$6 < 7 < 8$$
$$r = 84 - (6 * 12) = 12$$
$$\text{Dado que r = n entonces:}$$
$$q+ = 1$$
$$r = 84 - (7 * 12) = 0$$
$$84 = 7 * 12$$

3. $a = 100, n = 9$

$$99 < 100 < 108$$
$$9 * 11 < 100 < 9 * 12$$
$$11 < \frac{100}{9} < 12$$
$$r = 100 - (11 * 9) = 1$$
$$100 = 11 * 9 + 1$$

4. $a = -96, n = 12$

$$-108 < -96 < -84$$
$$-9 * 12 < -8 * 12 < -7 * 12$$

$$-9 < -8 < -7$$
$$r = -96 - (-9 * 12) = 12$$
Dado que r = n entonces:
$$q+ = 1$$
$$r = -96 - (-8 * 12) = 0$$
$$-96 = -8 * 12$$

5. $a = -4, n = 5$

$$-5 < -4 < 5$$
$$-1 * 5 < -4 < 1 * 5$$
$$-1 < -\frac{4}{5} < 1$$
$$r = -4 - (-1) * (5) = 1$$
$$-4 = (-1) * (5) + 1$$