Enrich

Equation Chains

In an equation chain, you use the solution of one equation to help you find the solution of the next equation in the chain. The last equation in the chain is used to check that you have solved the entire chain correctly.

Complete each equation chain.

$$1.5 + a = 12,$$

so
$$a = ____.$$
 2. $9f = 36$,

$$2.9f = 36.$$

so
$$f =$$
_____.

$$ab = 14$$
,

so
$$b = ____, g = 13 - f,$$

$$g = 13 - f$$

$$\operatorname{so} g = \underline{\hspace{1cm}}$$

$$16 \div b = c,$$

so
$$c =$$
_____.

$$63 \div g = h$$

so
$$h =$$
_____.

$$14 - d = c,$$

so
$$d =$$
_____.

$$h + i = 18,$$

so
$$i =$$
_____.

$$e \div d = 3$$
,

so
$$e = _{---}$$
.

$$j - i = 9$$

so
$$j =$$
_____.

$$a + e = 25 \leftarrow \mathbf{Check}$$
:

$$j \div f = 5 \leftarrow \mathbf{Check}$$
:

$$3. m \div 4 = 8,$$

so
$$m =$$
_____. **4.** 18 = $v - 12$,

4.
$$18 = v - 12$$

so
$$v =$$

$$m-n=12,$$

so
$$n = _{v \div w} = 3$$
,

$$v \div w = 3$$

so
$$w =$$
_____.

$$np = 100,$$

so
$$p =$$
_____.

$$80 = wx$$

so
$$x = _{---}$$
.

$$q = 40 + p,$$

so
$$q =$$
_____.

$$w + x = 2y,$$

so
$$y = _{---}$$
.

$$p + q - 10 = r$$
, so $r =$ _____.

so
$$r = _{---}$$
.

$$xy - z = 40$$
,

so
$$z =$$
_____.

$$r - m = 8 \leftarrow \mathbf{Check}$$
:

$$z - v = 2 \leftarrow \mathbf{Check}$$
:

5. CHALLENGE Create your own equation chain using these numbers for the variables: a = 10, b = 6, c = 18,and d = 3.