

As tableau:

$\{x = m \wedge y = n\}$   
 $\{1 * x^y = m^n\}$   $\left. \begin{array}{l} \downarrow \\ \leftarrow \end{array} \right\} \textcircled{1}$

$p := 1;$

$\{p * x^y = m^n\}$

while  $\neg(y=0)$  do

$\{p * x^y = m^n \wedge \neg(y=0)\}$   
 $\{(p * x) * x^{y-1} = m^n\}$   $\left. \begin{array}{l} \downarrow \\ \leftarrow \end{array} \right\} \textcircled{3}$

$p := p * x;$

$\{p * x^{y-1} = m^n\}$

$y := y - 1$

$\{p * x^y = m^n\}$

$\{p * x^y = m^n \wedge \neg\neg(y=0)\}$   
 $\{p = m^n\}$   $\left. \begin{array}{l} \downarrow \\ \leftarrow \end{array} \right\} \textcircled{2}$