1. \(
\frac{1}{4yz^8}
\)

1*. Factor \(x^2 - 169\). This factors as \((x + 13)(x - 13)\).

2.

a) \(x^2 + 4x - 21 = (x + 7)(x - 3)\).

b) \(y^2 + 3y - 10 = (y - 2)(y + 5)\).

c) \(a^2 + 3a - 130 = (a + 13)(a - 10)\).

d) \(4x^2 + 32x + 28 = 4(x + 1)(x + 7)\).

e) \(x^3 - 4x = x(x + 2)(x - 2)\).

f) \(j^2 - j - 56 = (j + 7)(j - 8)\).

g) \(3x^2 + 3x - 6 = 3(x + 2)(x - 1)\).

h) \(z^3 - 2z^2 - 35z = z(z + 5)(z - 7)\).

i) \(2x^2 - 18 = 2(x + 3)(x - 3)\).

j) \(y^2 + 3y - 130 = (y + 13)(y - 10)\).

k) \(z^3 - 4z^2 = z(z + 2)(z - 2)\).

l) \(5k^2 - 20k + 225 = 5(k + 5)(k - 9)\).

m) \(p^2 - 24p + 144 = (p - 12)^2\).

n) \(n^2 + 14n + 49 = (n + 7)^2\).

3. \(\{5, 60\}\).

4. Start by putting all \(x\)’s on one side of the equation:

\[
2x^2 + x - 3 = 0.
\]

This factors as

\[
(2x + 3)(x - 1) = 0,
\]

which has \(\{1, -3/2\}\) as its solution set.

5. Solution set is \(\{5, \frac{1}{3}\}\).