

8.6 Day 2 Homework

Given the possible area, find the length and width of the following rectangles. Remember, if you're struggling, check to see if the area is factorable or not by using the discriminant ($b^2 - 4ac$). You may also use product sum or grouping.

1. $x^2 + 3x + 2$

$$\begin{array}{r|l} 3 & 2 \\ \hline 5 & 7 \end{array}$$

$$\underline{1+2} \quad (2)(1)$$

$(x+1)(x+2)$

$$\begin{array}{cc} & x & 2 \\ x & x^2 & 2x \\ 1 & 1x & 2 \end{array}$$

2. $x^2 - 2x - 8$

$$\begin{array}{cc} & x & -4 \\ x & x^2 & -4x \\ 2 & 2x & -8 \end{array}$$

$(x-4)(x+2)$

3. $x^2 - 7x + 10$

$$\begin{array}{cc} & x & -5 \\ x & x^2 & 5x \\ -2 & -2x & 10 \end{array}$$

$(x-5)(x-2)$

4. $16 + 17x + x^2$

$x^2 + 17x + 16$

$$\begin{array}{cc} & x & 16 \\ x & x^2 & 16x \\ 1 & 1x & 16 \end{array}$$

$(x+16)(x+1)$

5. $2y^2 - 2y - 12$

$2(y^2 - y - 6)$

$$\begin{array}{cc} & y & -3 \\ 4 & y^2 & -3y \\ +2 & 2y & -6 \end{array}$$

$2(y+2)(y-3)$

6. $p^3 - 13p^2 + 36p$

$p(p^2 - 13p + 36)$

$$\begin{array}{cc} & p & -9 \\ p & p^2 & -9p \\ -4 & -4p & 36 \end{array}$$

$p(p-9)(p-4)$

7. $v^2 + 6v + 8$

$$\begin{array}{cc} & v & 2 \\ v & v^2 & 2v \\ 4 & 4v & 8 \end{array}$$

$(v+2)(v+4)$

8. $6m^3 + 24m^2 - 72m$

$6m(m^2 + 4m - 12)$

$$\begin{array}{cc} & m & 6 \\ m & m^2 & 6m \\ -2 & -2m & -12 \end{array}$$

$6m(m+6)(m-2)$

9. $5t^3 + 5t + 10t^2$

$5t(t^2 + 2t + 1)$

$$\begin{array}{cc} & t & 1 \\ t & t^2 & t \\ 1 & t & 1 \end{array}$$

$5t(t+1)(t+1)$ or $5t(t+1)^2$

10. $b^2 - 3b + 8$

not factorable