Solve for x:

Grab your laptop from the cart

But keep it **closed** until further directions are given

$x^2 + 8x + 15 = 0$

$x^2 + 5x - 14 = 0$

x^2	$5x$	Factors 15
$3x$	15	add 8

x +3
X + 5

x^2	$-2x$
$7x$	-14

x + 7
X - 2

$(x+3)(x+5) = 0$

$(x+7)(x-2) = 0$

$x+3 = 0 \qquad x+5 = 0$

$x+7 = 0 \qquad x-2 = 0$

$x = -3, -5$

$x = 2, -7$

$$3x^2 + 17x + 10 = 0$$

Factors $\underset{ac}{30}$

add $\underset{b}{17}$

$$x \begin{array}{|c|c|} \hline 3x^2 & 2x \\ \hline 15x & 30 \\ \hline \end{array}$$

$x + 15$

$3x + 2$

$(x+15)(3x+2) = 0$

$x + 15 = 0$ $3x + 2 = 0$
                  $\underline{-2}\underline{-2}$

$$\frac{3x}{3} = -\frac{2}{3}$$

$\boxed{x = -15, -\frac{2}{3}}$

Homework Check

1. "All rocks sink." Stony needs to find one rock that will not sink.

4. $\frac{5}{6}$, 1. Written with the common denominator 6, the sequence becomes $\frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{6}{6}, \ldots$

5. $-17, -21$. Four is subtracted from each term to get the next term.

6. 28, 36. To get from term to term, you add 2, then add 3, then add 4, and so on.

7. 21, 34. To find each term, you add the two previous terms.

8. 49, 64. The terms are the squares of consecutive whole numbers: $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, \ldots$. The next two terms are $7^2 = 49$ and $8^2 = 64$.

9. $-10, -24$. To get from term to term, you subtract 2, then subtract 4, then subtract 6, and so on.

10. 64, 128. Each term is double the previous term.

1. $2n$; 70

2. $n+1$; 36

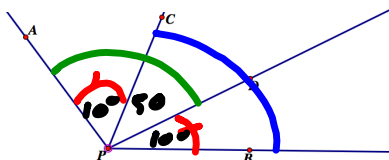4. $\dfrac{n(n-3)}{2}$; 560

5. $\dfrac{n(n-1)}{2}$; 595

6. $\dfrac{n(n-1)}{2}$; 595

2.4 Deductive Reasoning

Deductive Reasoning - the process of showing that certain statements follow logically from facts

Investigation 2.4 on Geometer's Sketchpad

Overlapping Angles Conjecture: If points C and D lie in the interior
   of $\angle APB$ and $m\angle APC = m\angle DPB$ then $m\angle APD = m\angle CPB$

Overlapping Segments Conjecture: If $\overline{AD}$ has points A, B, C, and
   D in that order with $\overline{AB} \cong \overline{CD}$, then $\overline{AC} \cong \overline{BD}$