1. Draw the interval $(-2, 3]$ on the number line.
   Answer: See the last page.

2. Arrange from least to greatest: $-2, |\pi|, |-2|, -|-1|, 1$. Use the symbols " $<$ " and " $\leq$ ".
   Answer:
   $$-2 < -|-1| < 1 < |-2| < |\pi|$$

3. Simplify to an integer: $|3\,(|4-7| \cdot |-1-2|) + 1|$.
   Answer:
   $$\begin{aligned} |3\,(|4-7| \cdot |-1-2|) + 1| &= |3\,(|-3| \cdot |-3|) + 1| \\ &= |3\,(3 \cdot 3) + 1| \\ &= |3\,(9) + 1| \\ &= |27 + 1| \\ &= |28| \\ &= 28 \end{aligned}$$

4. Rewrite $|3 - x| - |x + 1|$ without using the absolute value sign where:

   (a) $x \geq 3$.

   Answer: If $x \geq 3$, then $3 - x$ is negative and must be negated when the absolute value is removed and $x + 1$ is positive so remains unchanged. So for $x \geq 3$
   $$|3 - x| - |x + 1| = -(3 - x) - (x + 1) = -3 + x - x - 1 = -4$$

   (b) $x = 2$.
   Answer: Substitute and simplify:
   $$|3 - 2| - |2 + 1| = |1| - |3| = 1 - 3 = -2$$

   (c) $x < -2$.
   Answer: If $x < -2$, then $3 - x$ is positive and $x - 1$ negative. We must negate the second quantity if the absolute value sign is removed. So for $x < -2$
   $$|3 - x| - |x + 1| = 3 - x + (x + 1) = 4$$

5. Write using the absolute value sign the expression representing the distance on the number line between 2 and -5.
   Answer: $|2 - (-5)|$