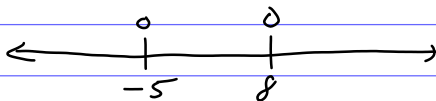


First look at $(x+5)^3(x-8)^4 = 0$ ← not the original question
 (times) (times, =, 0) so we can split

$$\begin{aligned} (x+5)^3 &= 0 & (x-8)^4 &= 0 \\ \sqrt[3]{(x+5)^3} &= \sqrt[3]{0} & \sqrt[4]{(x-8)^4} &= \sqrt[4]{0} \\ x+5 &= 0 & x-8 &= 0 \\ x &= -5 & x &= 8 \end{aligned}$$



	$(-\infty, -5)$	$(-5, 8)$	$(8, \infty)$
$(x+5)^3$	-	+	+
$(x-8)^4$	+	+	+
$(x+5)^3(x-8)^4$	-	+	+

A horizontal number line with arrows at both ends. There are two points marked with open circles: one at -5 and one at 8. Below the line, the sign of the expression $(x+5)^3(x-8)^4$ is indicated in each region: minus for $x < -5$, plus for $-5 < x < 8$, and plus for $x > 8$. Green arrows point from the signs in the table above to the corresponding regions on the number line.

Now to answer the original question:

$$(x+5)^3(x-8)^4 \leq 0 \text{ happens when } x \text{ is } (-\infty, -5] \cup [8, \infty)$$