Multiplying Positive and Negative Numbers

Find the first 6 products and look for a pattern in the answers.

5 • 4 =
4 • 4 =
3 • 4 =
2 • 4 =
1 • 4 =
0 • 4 =
-1 • 4 =
-2 • 4 =
-3 • 4 =
-4 • 4 =
-5 • 4 =

What is happening from answer to answer as we decrease the first number? ________________

What kind of number do we get when we have:
a) a positive times a positive? ___________
b) a positive times a negative? ___________

We can also view the negative sign as separate from the multiplication itself, like “– • 5 • 4”, which is the “opposite of 5 • 4”, or – 20.
Multiplying Two Negative Numbers

Refer to what we discovered on the previous page:

\[
\begin{align*}
5 \cdot -4 &= \\
4 \cdot -4 &= \\
3 \cdot -4 &= \\
2 \cdot -4 &= \\
1 \cdot -4 &= \\
0 \cdot -4 &= \\
-1 \cdot -4 &= \\
-2 \cdot -4 &= \\
-3 \cdot -4 &= \\
-4 \cdot -4 &= \\
-5 \cdot -4 &= 
\end{align*}
\]

What is happening from answer to answer as we decrease the first number? ________________

What kind of number do we get when we have:
a) a positive times a negative? ___________ (as previously discovered)

b) a negative times a negative? ___________

Again, we can also look at two negative signs as separate from the multiplication itself so that we have something like \(-5 \cdot -4 = \text{“} - \cdot - \cdot 5 \cdot 4 \text{”} \), or “the opposite of a negative 20” = +20