Q1 List four pairs of locations for *a* and *b* such that *a* \* *b* = 6.

Q2 Find a location for *a* and *b* in which all three markers lie directly on top of each other. Is there more than one location?

Q3 Can *a*, *b* and *a* \* *b* all lie to the left of 0? Explain.

Q4 Find locations for *a* and *b* to the right of 0 such that *a* \* *b* is smaller than both *a* and *b*. Describe all such locations.

Q5. Drag *a* to 0. Then slowly drag *b* back and forth along the number line. What happens to the product? Why?

Q6 Drag *a* to 1. Then drag *b* back and forth. Describe the movement of *a* \* *b*. Why does this behaviour make sense?

Q7 Drag *a* to -1. Then drag *b* back and forth. Describe the movement of *a* \* *b*. Why does this behaviour make sense?

Q8. Move both *a* and *b* so that they’re near the right edge of the sketch. Now drag a slowly to the left, and watch *a* \* *b* move. When *a* \* *b* reaches the left edge of the sketch, move *a* in the opposite direction so that *a* \* *b* glides back to the right. Based on what you’ve observed, explain why it makes sense that a positive number times a negative number equals a negative number.

Q9 Move *b* to the left of 0. Once again, drag *a* back and forth, observing the behaviour of the product, *a* \* *b*. Based on the behavior you observe, explain why it makes sense that a negative number times a negative number equals a positive

number.