

Explain the sign rule using the distributive property

NAME	DATE	SCORE / 10
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1 $(-5)(5 + (-5)) = (-5)(5) + (-5)(-5)$. The left side is 0, because $5 + (-5) = 0$. What must $(-5)(-5)$ equal, and why?

- ☐ -25, because $(-5)(5) = -25$.
 ☐ 0, because $5 + (-5) = 0$.
 ☐ 25, because $-25 + 25 = 0$.
☐ -25, because the product of two negative numbers is negative.

2 Use $(-8)(4 + (-4)) = (-8)(4) + (-8)(-4)$ to explain why $(-8)(-4)$ must be positive.

3 $(-2)(4 + (-4)) = (-2)(4) + (-2)(-4)$. The left side is 0, because $4 + (-4) = 0$. What must $(-2)(-4)$ equal, and why?

- ☐ 8, because $-8 + 8 = 0$.
 ☐ 0, because $4 + (-4) = 0$.
☐ -8, because the product of two negative numbers is negative.
☐ -8, because $(-2)(4) = -8$.

- 4** Use $(-3)(8 + (-8)) = (-3)(8) + (-3)(-8)$ to explain why $(-3)(-8)$ must be positive.

- 5** $(-3)(9 + (-9)) = (-3)(9) + (-3)(-9)$. The left side is 0, because $9 + (-9) = 0$. What must $(-3)(-9)$ equal, and why?

☐ 0, because $9 + (-9) = 0$. ☐ 27, because $-27 + 27 = 0$. ☐ -27, because $(-3)(9) = -27$.
☐ -27, because the product of two negative numbers is negative.

- 6** Use $(-6)(8 + (-8)) = (-6)(8) + (-6)(-8)$ to explain why $(-6)(-8)$ must be positive.

- 7** $(-4)(7 + (-7)) = (-4)(7) + (-4)(-7)$. The left side is 0, because $7 + (-7) = 0$. What must $(-4)(-7)$ equal, and why?

☐ -28, because the product of two negative numbers is negative. ☐ 0, because $7 + (-7) = 0$.
☐ -28, because $(-4)(7) = -28$. ☐ 28, because $-28 + 28 = 0$.

8 Use $(-4)(9 + (-9)) = (-4)(9) + (-4)(-9)$ to explain why $(-4)(-9)$ must be positive.

9 $(-8)(7 + (-7)) = (-8)(7) + (-8)(-7)$. The left side is 0, because $7 + (-7) = 0$. What must $(-8)(-7)$ equal, and why?

- ☐ 56, because $-56 + 56 = 0$. ☐ 0, because $7 + (-7) = 0$. ☐ -56, because $(-8)(7) = -56$.
☐ -56, because the product of two negative numbers is negative.

10 Use $(-4)(2 + (-2)) = (-4)(2) + (-4)(-2)$ to explain why $(-4)(-2)$ must be positive.

Explain the sign rule using the distributive property

1 25, because $-25 + 25 = 0$.

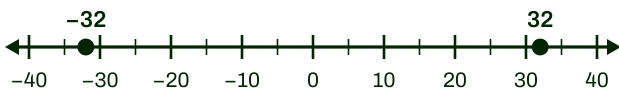
3 8, because $-8 + 8 = 0$.

5 27, because $-27 + 27 = 0$.

7 28, because $-28 + 28 = 0$.

9 56, because $-56 + 56 = 0$.

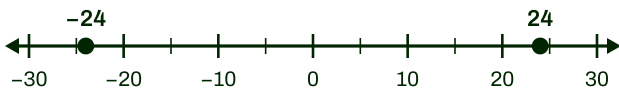
2 A written explanation



A model answer: $4 + (-4) = 0$, so the left side is $(-8)(0) = 0$. On the right, $(-8)(4) = -32$. So $-32 + (-8)(-4) = 0$, and the only number that adds to -32 to make 0 is 32. So $(-8)(-4) = 32$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $4 + (-4) = 0$; (2) on the right, $(-8)(4) = -32$; (3) so $(-8)(-4)$ must be the number that adds to -32 to make 0, which is 32. Quoting “two negatives make a positive” does not count: that is the rule being explained.

4 A written explanation



A model answer: $8 + (-8) = 0$, so the left side is $(-3)(0) = 0$. On the right, $(-3)(8) = -24$. So $-24 + (-3)(-8) = 0$, and the only number that adds to -24 to make 0 is 24. So $(-3)(-8) = 24$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $8 + (-8) = 0$; (2) on the right, $(-3)(8) = -24$; (3) so $(-3)(-8)$ must be the number that adds to -24 to make 0, which is 24. Quoting “two negatives make a positive” does not count: that is the rule being explained.

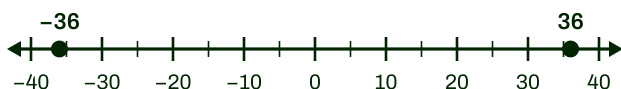
6 A written explanation



A model answer: $8 + (-8) = 0$, so the left side is $(-6)(0) = 0$. On the right, $(-6)(8) = -48$. So $-48 + (-6)(-8) = 0$, and the only number that adds to -48 to make 0 is 48. So $(-6)(-8) = 48$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $8 + (-8) = 0$; (2) on the right, $(-6)(8) = -48$; (3) so $(-6)(-8)$ must be the number that adds to -48 to make 0, which is 48. Quoting “two negatives make a positive” does not count: that is the rule being explained.

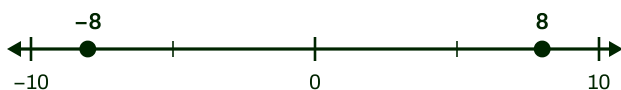
8 A written explanation



A model answer: $9 + (-9) = 0$, so the left side is $(-4)(0) = 0$. On the right, $(-4)(9) = -36$. So $-36 + (-4)(-9) = 0$, and the only number that adds to -36 to make 0 is 36. So $(-4)(-9) = 36$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $9 + (-9) = 0$; (2) on the right, $(-4)(9) = -36$; (3) so $(-4)(-9)$ must be the number that adds to -36 to make 0, which is 36. Quoting “two negatives make a positive” does not count: that is the rule being explained.

10 A written explanation



A model answer: $2 + (-2) = 0$, so the left side is $(-4)(0) = 0$. On the right, $(-4)(2) = -8$. So $-8 + (-4)(-2) = 0$, and the only number that adds to -8 to make 0 is 8. So $(-4)(-2) = 8$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $2 + (-2) = 0$; (2) on the right, $(-4)(2) = -8$; (3) so $(-4)(-2)$ must be the number that adds to -8 to make 0, which is 8. Quoting “two negatives make a positive” does not count: that is the rule being explained.