

Explain the sign rule using the distributive property

NAME	DATE	SCORE / 10
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1 $(-2)(8 + (-8)) = (-2)(8) + (-2)(-8)$. The left side is 0, because $8 + (-8) = 0$. What must $(-2)(-8)$ equal, and why?

- ☐ 0, because $8 + (-8) = 0$.
 ☐ 16, because $-16 + 16 = 0$.
 ☐ -16, because $(-2)(8) = -16$.
☐ -16, because the product of two negative numbers is negative.

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

3 $(-7)(3 + (-3)) = (-7)(3) + (-7)(-3)$. The left side is 0, because $3 + (-3) = 0$. What must $(-7)(-3)$ equal, and why?

- ☐ 21, because $-21 + 21 = 0$.
☐ -21, because the product of two negative numbers is negative.
☐ -21, because $(-7)(3) = -21$.
 ☐ 0, because $3 + (-3) = 0$.

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

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

☐ -81, because the product of two negative numbers is negative.
☐ -81, because $(-9)(9) = -81$. ☐ 0, because $9 + (-9) = 0$. ☐ 81, because $-81 + 81 = 0$.

- 6** Use $(-2)(6 + (-6)) = (-2)(6) + (-2)(-6)$ to explain why $(-2)(-6)$ must be positive.

- 7** $(-9)(5 + (-5)) = (-9)(5) + (-9)(-5)$. The left side is 0, because $5 + (-5) = 0$. What must $(-9)(-5)$ equal, and why?

☐ -45, because the product of two negative numbers is negative.
☐ 45, because $-45 + 45 = 0$. ☐ 0, because $5 + (-5) = 0$. ☐ -45, because $(-9)(5) = -45$.

- 8** Use $(-5)(7 + (-7)) = (-5)(7) + (-5)(-7)$ to explain why $(-5)(-7)$ must be positive.

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

- ☐ -72, because $(-8)(9) = -72$.
☐ -72, because the product of two negative numbers is negative.
☐ 72, because $-72 + 72 = 0$. ☐ 0, because $9 + (-9) = 0$.

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

Explain the sign rule using the distributive property

1 16, because $-16 + 16 = 0$.

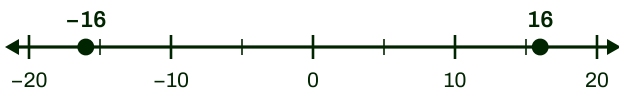
3 21, because $-21 + 21 = 0$.

5 81, because $-81 + 81 = 0$.

7 45, because $-45 + 45 = 0$.

9 72, because $-72 + 72 = 0$.

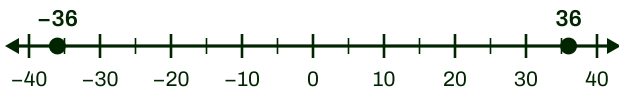
2 A written explanation



A model answer: $8 + (-8) = 0$, so the left side is $(-2)(0) = 0$. On the right, $(-2)(8) = -16$. So $-16 + (-2)(-8) = 0$, and the only number that adds to -16 to make 0 is 16. So $(-2)(-8) = 16$, 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, $(-2)(8) = -16$; (3) so $(-2)(-8)$ must be the number that adds to -16 to make 0, which is 16. Quoting “two negatives make a positive” does not count: that is the rule being explained.

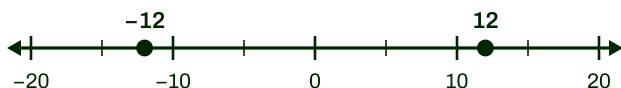
4 A written explanation



A model answer: $4 + (-4) = 0$, so the left side is $(-9)(0) = 0$. On the right, $(-9)(4) = -36$. So $-36 + (-9)(-4) = 0$, and the only number that adds to -36 to make 0 is 36. So $(-9)(-4) = 36$, 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, $(-9)(4) = -36$; (3) so $(-9)(-4)$ 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.

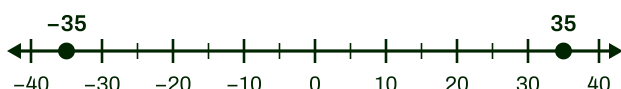
6 A written explanation



A model answer: $6 + (-6) = 0$, so the left side is $(-2)(0) = 0$. On the right, $(-2)(6) = -12$. So $-12 + (-2)(-6) = 0$, and the only number that adds to -12 to make 0 is 12. So $(-2)(-6) = 12$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $6 + (-6) = 0$; (2) on the right, $(-2)(6) = -12$; (3) so $(-2)(-6)$ must be the number that adds to -12 to make 0, which is 12. Quoting “two negatives make a positive” does not count: that is the rule being explained.

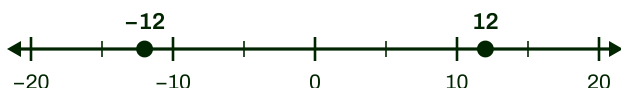
8 A written explanation



A model answer: $7 + (-7) = 0$, so the left side is $(-5)(0) = 0$. On the right, $(-5)(7) = -35$. So $-35 + (-5)(-7) = 0$, and the only number that adds to -35 to make 0 is 35. So $(-5)(-7) = 35$, which is positive.

What counts as right: Counts as right if it makes these points: (1) the left side is 0, because $7 + (-7) = 0$; (2) on the right, $(-5)(7) = -35$; (3) so $(-5)(-7)$ must be the number that adds to -35 to make 0, which is 35. Quoting “two negatives make a positive” does not count: that is the rule being explained.

10 A written explanation



A model answer: $4 + (-4) = 0$, so the left side is $(-3)(0) = 0$. On the right, $(-3)(4) = -12$. So $-12 + (-3)(-4) = 0$, and the only number that adds to -12 to make 0 is 12. So $(-3)(-4) = 12$, 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, $(-3)(4) = -12$; (3) so $(-3)(-4)$ must be the number that adds to -12 to make 0, which is 12. Quoting “two negatives make a positive” does not count: that is the rule being explained.