

$$(xy + \bar{x})(xy + z)$$

The diagram shows the expansion of the product $(xy + \bar{x})(xy + z)$. Red lines connect the terms in the first factor to the terms in the second factor. A line connects xy to xy , a line connects xy to z , a line connects \bar{x} to xy , and a line connects \bar{x} to z . The result is $xy + xy z + 0 + \bar{x} z$. The xy term is underlined, and the $xy z$ term is crossed out with a red line.

$$= xy + xy z + \bar{x} z$$

$$= xy (1 + z) + \bar{x} z$$

$$= xy + \bar{x} z$$

$$A + BC$$
$$= (A + B)(A + C)$$