

**Exercise 83**

**Signs of Numbers** Let  $a$ ,  $b$ , and  $c$  be real numbers such that  $a > 0$ ,  $b < 0$ , and  $c < 0$ . Find the sign of each expression.

(a)  $-a$

(b)  $bc$

(c)  $a - b$

(d)  $ab + ac$ 

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**Solution**

Since  $a$  is positive,  $-a$  is negative.

Since  $b$  and  $c$  are negative,  $bc$  is positive.

Since  $a$  is positive and  $b$  is negative,  $a - b$  is positive.

Since  $a$  is positive and  $b$  and  $c$  are negative,  $ab + ac = a(b + c)$  is negative.