

## Determining if Vectors are Parallel

		<u>Parallel or not parallel?</u>
$a + b$	$2a + 2b$	
$a + b$	$3a + 3b$	
$a + b$	$3a - 3b$	
$a + b$	$-3a - 3b$	
$5a + 5b$	$-3a - 3b$	
$5a + 10b$	$-3a - 3b$	
$5a + 10b$	$-6a - 3b$	
$5a + 10b$	$-3a - 6b$	
$10b + 5a$	$-3a - 6b$	
$b + \frac{1}{2}a$	$-3a - 6b$	
$b + \frac{1}{2}a$	$-3a - 6b + 2a$	
$b + \frac{1}{2}a$	$-3a - 6b + 2a + 4b$	
$b + \frac{1}{2}a$	$-\frac{3}{4}a - \frac{3}{2}b + \frac{1}{2}a + b$	
$\frac{1}{5}b + \frac{1}{10}a$	$-\frac{3}{4}a - \frac{3}{2}b + \frac{1}{2}a + b$	
$\frac{1}{5}b + \frac{1}{10}a$	$\frac{3}{4}a + \frac{3}{2}b - \frac{1}{2}a - b$	
$\frac{1}{5}b + \frac{1}{10}a$	$\frac{1}{4}(3a + 6b) - \frac{1}{2}(a + 2b)$	
$\frac{1}{5}b + \frac{1}{10}a$	$\frac{1}{4}(3a + 6b) + \frac{1}{2}(a + 2b)$	
$-\left(\frac{1}{5}b + \frac{1}{10}a\right)$	$\frac{1}{4}(3a + 6b) + \frac{1}{2}(a + 2b)$	
$-\left(\frac{1}{5}b - \frac{1}{10}a\right)$	$\frac{1}{4}(3a + 6b) + \frac{1}{2}(a + 2b)$	

## Determining if Vectors are Parallel: ANSWERS

		<u>Parallel or not parallel?</u>
$a + b$	$2a + 2b$	YES $a + b$ $2(a + b)$
$a + b$	$3a + 3b$	YES $a + b$ $3(a + b)$
$a + b$	$3a - 3b$	NO
$a + b$	$-3a - 3b$	YES $a + b$ $-3(a + b)$
$5a + 5b$	$-3a - 3b$	YES $5(a + b)$ $-3(a + b)$
$5a + 10b$	$-3a - 3b$	NO
$5a + 10b$	$-6a - 3b$	NO
$5a + 10b$	$-3a - 6b$	YES $5(a + 2b)$ $-3(a + 2b)$
$10b + 5a$	$-3a - 6b$	YES $5(a + 2b)$ $-3(a + 2b)$
$b + \frac{1}{2}a$	$-3a - 6b$	YES $\frac{1}{2}(a + 2b)$ $-3(a + 2b)$
$b + \frac{1}{2}a$	$-3a - 6b + 2a$	NO
$b + \frac{1}{2}a$	$-3a - 6b + 2a + 4b$	YES $\frac{1}{2}(a + 2b)$ $-(a + 2b)$
$b + \frac{1}{2}a$	$-\frac{3}{4}a - \frac{3}{2}b + \frac{1}{2}a + b$	YES $\frac{1}{2}(a + 2b)$ $-\frac{1}{4}(a + 2b)$
$\frac{1}{5}b + \frac{1}{10}a$	$-\frac{3}{4}a - \frac{3}{2}b + \frac{1}{2}a + b$	YES $\frac{1}{10}(a + 2b)$ $-\frac{1}{4}(a + 2b)$
$\frac{1}{5}b + \frac{1}{10}a$	$\frac{3}{4}a + \frac{3}{2}b - \frac{1}{2}a - b$	YES $\frac{1}{10}(a + 2b)$ $-\frac{1}{4}(a + 2b)$

$\frac{1}{5}b + \frac{1}{10}a$	$\frac{1}{4}(3a + 6b) - \frac{1}{2}(a + 2b)$	YES $\frac{1}{10}(a + 2b)$ $-\frac{1}{4}(a + 2b)$
$\frac{1}{5}b + \frac{1}{10}a$	$\frac{1}{4}(3a + 6b) + \frac{1}{2}(a + 2b)$	YES $\frac{1}{10}(a + 2b)$ $\frac{5}{4}(a + 2b)$
$-\left(\frac{1}{5}b + \frac{1}{10}a\right)$	$\frac{1}{4}(3a + 6b) + \frac{1}{2}(a + 2b)$	YES $-\frac{1}{10}(a + 2b)$ $\frac{5}{4}(a + 2b)$
$-\left(\frac{1}{5}b - \frac{1}{10}a\right)$	$\frac{1}{4}(3a + 6b) + \frac{1}{2}(a + 2b)$	NO