**Activity Vector Geometry**

1. ABCD is a parallelogram. $\rightharpoonaccent{AD}$ = p and $\rightharpoonaccent{DC}$ = q. S is the Midpoint of AC. Find $\rightharpoonaccent{SB}$ in terms of p and q.

 B C

 S

A D

1. $\rightharpoonaccent{OP}= \left(\genfrac{}{}{0pt}{}{-2}{-5}\right)$ and $\rightharpoonaccent{QR}=2\rightharpoonaccent{OP}$.
2. Write $\rightharpoonaccent{QR}$ as a column vector
3. Write two statements about the relationship between the lines OP and QR
4. OMPQ is a rectangle and O is the origin. $\rightharpoonaccent{OM}=a$ and $\rightharpoonaccent{MP}=b$. T is on OP so that OT : TP = 3 : 1. Find the following vectors in terms of a and b in their simplest form.
5. $\rightharpoonaccent{OP}$ M P
6. $\rightharpoonaccent{MT}$
7. $\rightharpoonaccent{QT}$ T

 O Q

**Answer key**

1. O.5q – 0.5p
2. $\rightharpoonaccent{QR}= \left(\genfrac{}{}{0pt}{}{-4}{-10}\right)$
* QR is twice as long as OP
* QR and OP have the same direction and therefore are parallel
1. a) a + b

b) 0.75b – 0.25a

c) 0.75a - 0.25b