Name: _____

WORKSHEET

Displacement vectors

1 Draw the displacement vector for each of the following movements on the same set of axes.

a $(0, 0)(4, 4)$

b $(-1, 1)(-5, 3)$

c $(4, 2)(1, -2)$

d $(-4, 5)(0, 1)$

e $(-3, -2)(1, -5)$

f $(-5, -4)(-4, 0)$

g $(-3, 1)(2, -5)$

h $(4, -5)(5, -3)$

i $(5, 2)(4, 5)$

j $(4, 1)(2, -4)$

k $(-2, 5)(2, 3)$

l $(-4, 2)(-3, -4)$

m $(-2, 2)(-5, 5)$

n $(1, 4)(2, 5)$

2 Find the component form (x, y) of the displacement vectors in question **1**.

3 Find the polar form (r, θ) of the displacement vectors in question **1**.

4 Find the polar form of the displacement vectors for each of the following movements.

a $(-3, -1)(-2, 4)$

b $(3, 2)(1, 5)$

c $(-10, -2)(3, -2)$

d $(2, 6)(-1, -2)$

e $(12, -5)(9, -1)$

f $(1, -10)(0, 0)$

g $(-6, 7)(1, 3)$

h $(-3, 5)(-2, -4)$

i $(8, -5)(4, 1)$

j $(-3, 7)(2, -2)$

k $(1, 6)(-1, 5)$

l $(-4, 5)(3, 2)$

m $(1, -4)(8, -6)$

n $(9, 3)(3, 4)$

o $(3, 7)(0, -8)$

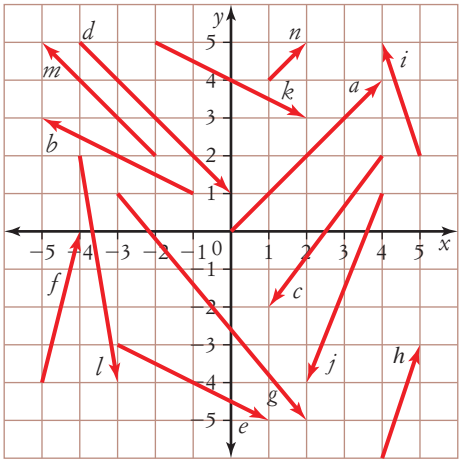
p $(-4, 3)(-2, -9)$

q $(4, -7)(1, -1)$

r $(9, 2)(-4, 6)$

Answers

1



2 **a** $(4, 4)$

b $(-4, 2)$

c $(-3, -4)$

d $(4, -4)$

e $(4, -3)$

f $(1, 4)$

g $(5, -6)$

h $(1, 2)$

i $(-1, 3)$

j $(-2, -5)$

k $(4, -2)$

l $(1, -6)$

m $(-3, 3)$

n $(1, 1)$

3 **a** $(5.7, 45°)$

b $(4.5, 153°)$

c $(5, 233°)$

d $(5.7, 315°)$

e $(5, 323°)$

f $(4.1, 76°)$

g $(7.8, 310°)$

h $(2.2, 63°)$

i $(3.2, 108°)$

j $(5.4, 248°)$

k $(4.5, 333°)$

l $(6.1, 279°)$

m $(4.2, 135°)$

n $(1.4, 45°)$

4 **a** $(5.1, 79°)$

b $(3.6, 124°)$

c $(13, 0°)$

d $(8.5, 249°)$

e $(5, 127°)$

f $(10.0, 96°)$

g $(8.1, 330°)$

h $(9.1, 276°)$

i $(7.2, 124°)$

j $(10.3, 299°)$

k $(2.2, 207°)$

l $(7.6, 337°)$

m $(7.3, 344°)$

n $(6.1, 171°)$

o $(15.3, 259°)$

p $(12.2, 279°)$

q $(6.7, 117°)$

r $(13.6, 163°)$