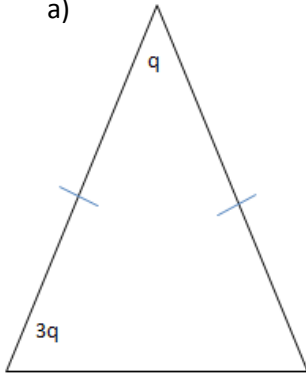# Geometry: Polygons and Parallel Lines
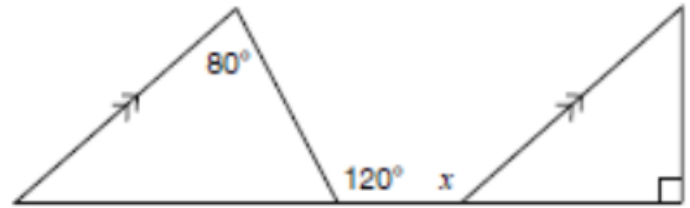
MPM1D

1. Solve for all unknown variables in each diagram below. Justify your work.
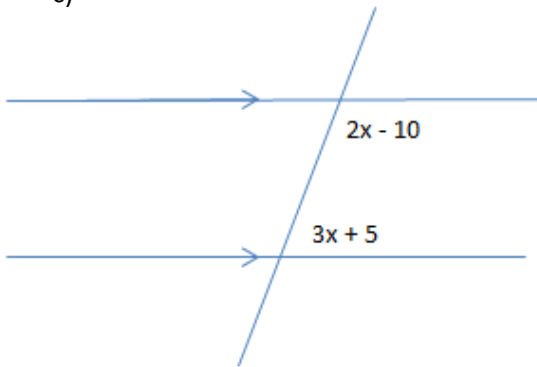
a)

q

$3q$

b)
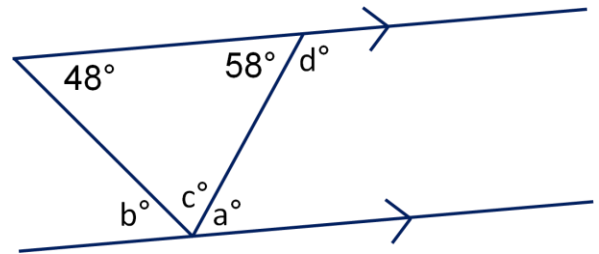
$80°$

$120°$ x
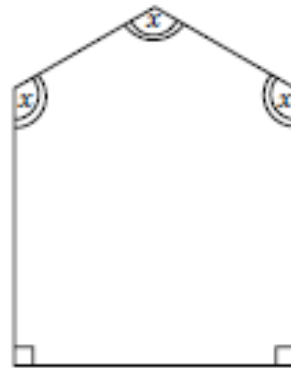
c)

$2x - 10$

$3x + 5$

d)

$48°$ $58°$ $d°$

$b°$ $c°$ $a°$

e)

A

$40°$

B $45°$ C

y

D

f)
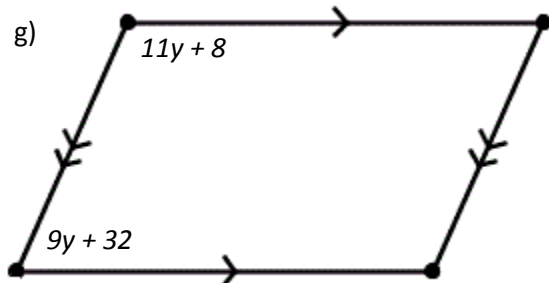
x

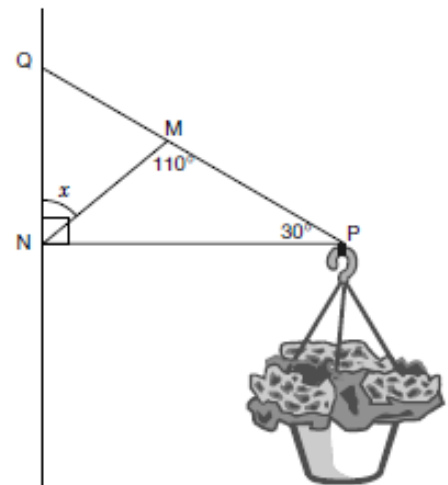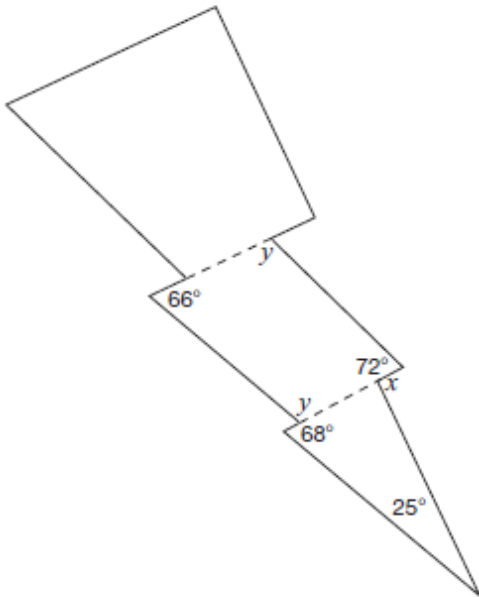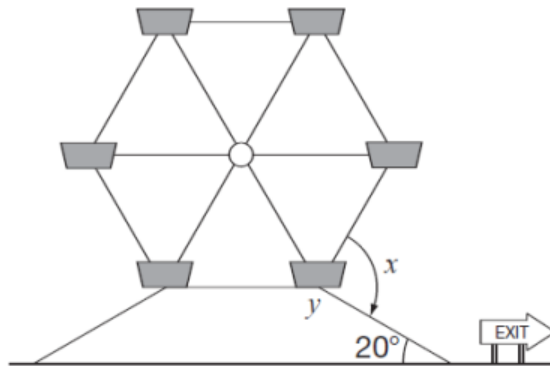x x

g)

$11y + 8$

$9y + 32$

h)

Q

M

$110°$

x

N $30°$ P
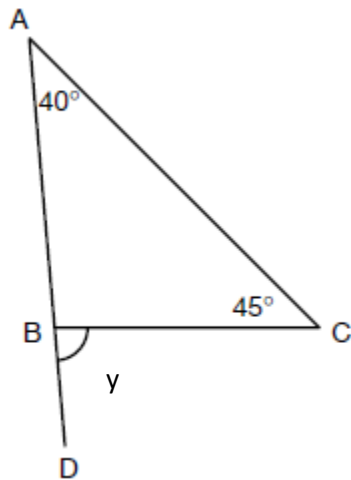
2.   Pravin designs a lightning bolt using two quadrilaterals and one triangle as shown below.

Find the values of x and y.

66°

72° x

y

68°

25°

3.   **Wheels of Fun**

A Ferris wheel has six sides of equal length. The exit ramp of the Ferris wheel is in the shape of a trapezoid and has an angle of incline of 20°.

x

y

20°   EXIT

What are the values of *x* and *y*?

Use geometric properties to justify your answer.

4. text page 366-367 #8cd, 9c, 10b and page 398 #14, 15

ANSWERS

1.   a)q=36 b) x = 140 c) x = 37   d) a = 58, b = 48, c= 74 e) y = 85 f) x = 120 g) y = 7 h) x = 50
2.   x = 93, y = 111   **3.** y = 160   x = 80