SHARP

Worksheet 15: Pythagoras

Grade 8 Mathematics

1. Which of the following triangles can you use Pythagoras with?

    a)

    b)

    c)
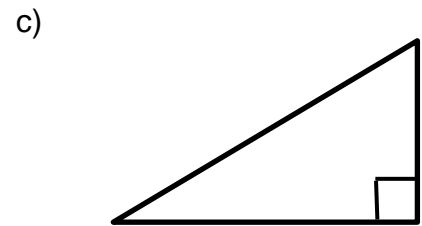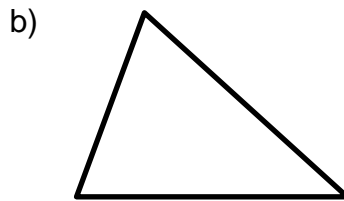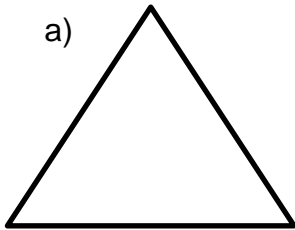
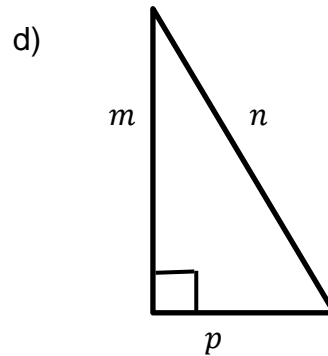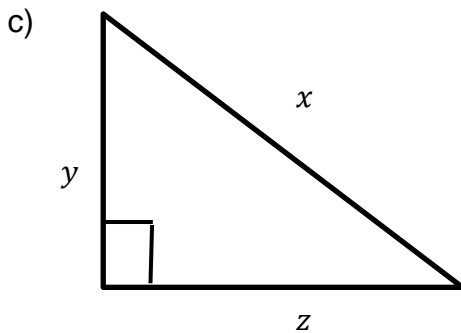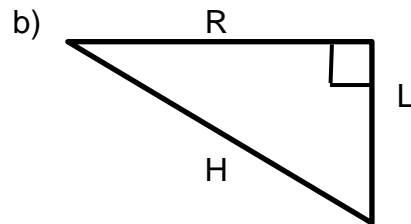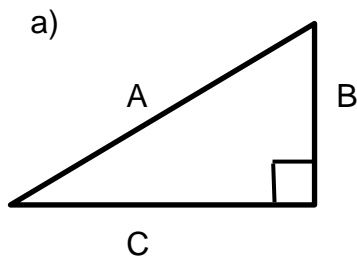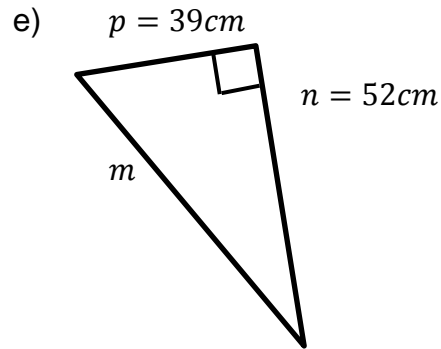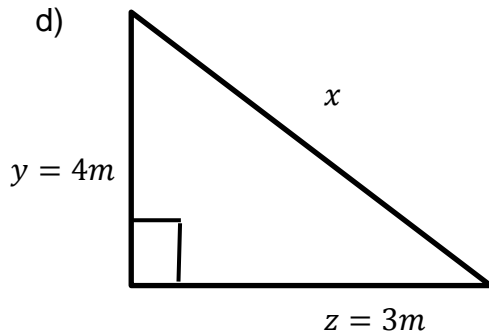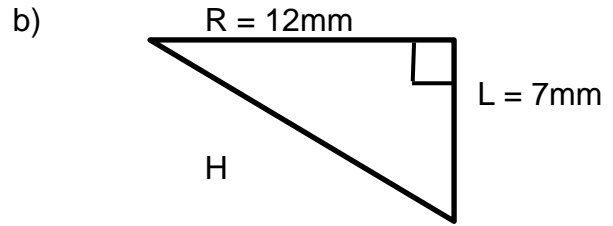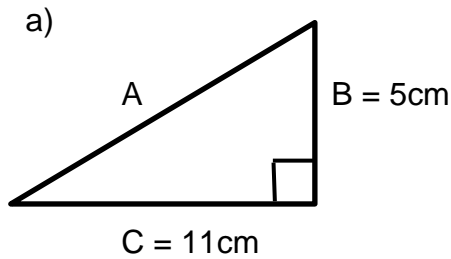2. Given the triangles below, give the formula of Pythagoras for each triangle.

    a)

    A   B

    C

    b)

    R

    L

    H

    c)

    x

    y

    z

    d)

    m   n

    p

3. Given the values for the sides of the triangles below, find the missing value.

a)

A   B = 5cm

C = 11cm

b)

R = 12mm

L = 7mm

H

d)

x

$y = 4m$

$z = 3m$

e) $p = 39cm$

$n = 52cm$

m

4. If the shortest sides of each triangle are given, find the hypotenuse of each of the following right-angled triangles (leave your answer in simplest surd form):

a) $a = 11cm, \ b = 17cm, \ c = ?$ b) $d = 12mm, \ e = 9mm, \ f = ?$

c) $g = 6m, \ h = 12m, \ i = ?$ d) $j = 34mm, \ k = 46mm, \ l = ?$

e) $m = 14m, \ n = 25m, \ o = ?$ f) $p = 9 \ cm, \ q = 43cm, \ r = ?$

g) $s = 30m, \ t = 2m, \ u = ?$ h) $v = 12mm, \ w = 22mm, \ x = ?$

i) $x = 3cm, \ y = 31cm, \ z = ?$ j) $m = 21m, \ n = 32m, \ p = ?$

5. Look at the triangles below, and find the missing side (leave your answers in simplest surd form).

a)

A = 47m   B = 8m

C = ?

b)   R

L = 7mm

H = 13mm

d)

x

$y = 41m$

$z = 34m$

e)

m

$n = 15cm$

$p = 13cm$
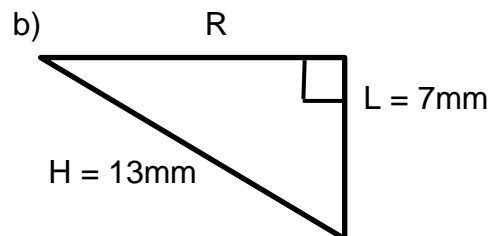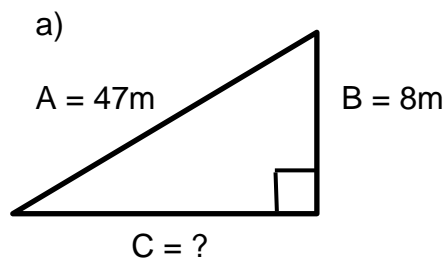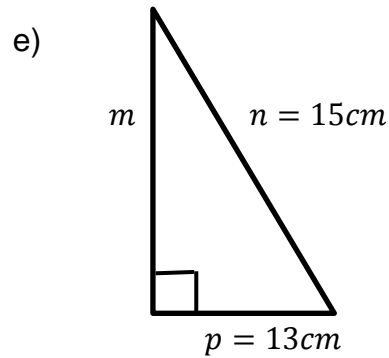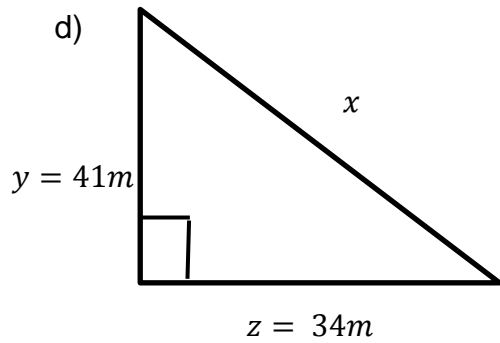
6. Given all three sides of a triangle, use Pythagoras to determine whether the triangle is right-angled or not. (Remember that the longest side is the hypotenuse).

a) a = 26cm, b = 33cm, c = 40cm

b) d = 20m, e = 48m, f = 43,63m

c) g = 47mm, h = 5mm i = 24mm

d) j = 30m, k = 37m, l = 47,63m

e) m = 33cm, n = 28cm, o = 39cm

f) p = 42cm, q = 27cm, r = 19cm

g) s = 2mm, t = $\sqrt{20}$ mm, u = 4mm

h) v = 11m, w = 24m, x = 28m

i) x = 1 300mm, y = 1 200mm, z = 500mm

j) a = 31cm, b = 21cm, c = 40cm

k) d = 27cm, e = 3cm, f = 21cm

l) g = 24m, h = 25m, j = 7m