The diagram shows a quadrilateral ABCD.

we need this side
... Pythagoras!

16 cm

10.58

$H x$

40⁰

B

C

A

12 cm   D
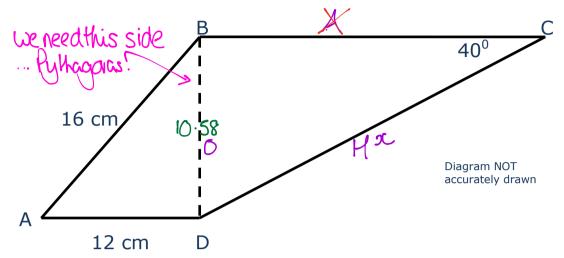
Diagram NOT
accurately drawn

AB = 16 cm.
AD = 12 cm.
Angle BCD = 40°.
Angle ADB = angle CBD = 90°.

Calculate the length of CD.
Give your answer correct to 3 significant figures.

$BD^2 = 16^2 - 12^2$
$= 112$
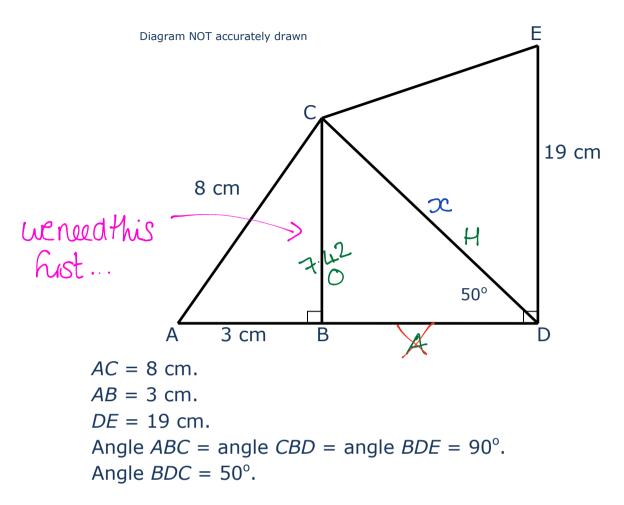$BD = \sqrt{112}$
$= 10.5830052 4 cm$

S/H C^A H T^A

$\sin 40 = \dfrac{10.58}{x}$

(5)

$x = 10.58 \div \sin 40$
$= 16.45955809$

leave the "full" value
of BD in your
calculator...

$= 16.5 cm$

E

C

19 cm

8 cm

we need this
first...

x

H

7.42
O

50°

A   3 cm   B   A   D

AC = 8 cm.
AB = 3 cm.
DE = 19 cm.
Angle ABC = angle CBD = angle BDE = 90°.
Angle BDC = 50°.

a) Calculate the length of CD. Give your answer correct to 3 significant figures.

$CB^2 = 8^2 - 3^2$
$\quad = 55$
$CB = \sqrt{55}$
$\quad = 7.41698487 cm$

$\overset{O}{S}\sqrt{H} \quad C\overset{A}{H} \quad T\overset{O}{A}$

$\sin 50° = \dfrac{7.42}{x}$ (4)

$x = 7.42 \div \sin 50$

$x = 9.686122087$

$x = 9.69 cm$