Year 9 Class 14 questions

Q1

The two shapes below are similar.
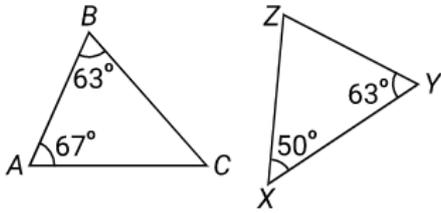
Which angle is matching to ∠C?

○ ∠Z   ○ ∠X   ○ ∠Y
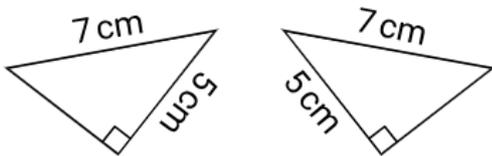
Which side is matching to YZ?

○ BC   ○ AC   ○ AB

Complete the pair of matching angles.
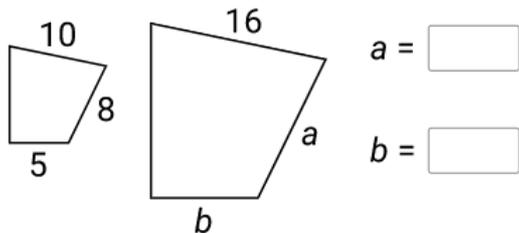
∠A = ∠☐
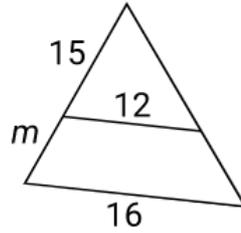
Q2

Which test proves the two triangles are congruent?

○ RHS   ○ SSS   ○ SAS   ○ AAS

Q3

Find the values of *a* and *b* given the shapes are similar.

a = ☐

b = ☐

Q4

Find *m*, given the shapes are similar.

☐

Q5

Prove that ΔMON|||ΔPOQ.

In ΔMON and ΔPOQ.

∠M = ∠☐ (given)

∠MON = ∠☐ (vert.opp.)

∴ ΔMON|||ΔPOQ (equiangular)

Hence find the value of *x*.

☐
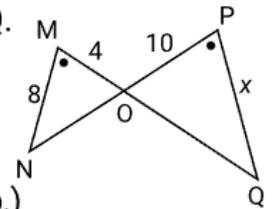
Q6

Find the scale factor for the similar figures.

original   scaled
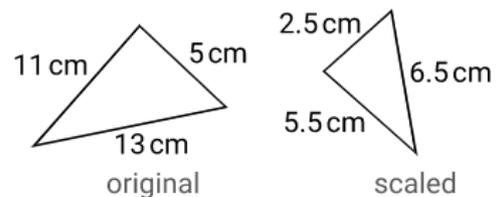
scale factor = ☐

Q7

Find the scale factor for the similar figures.

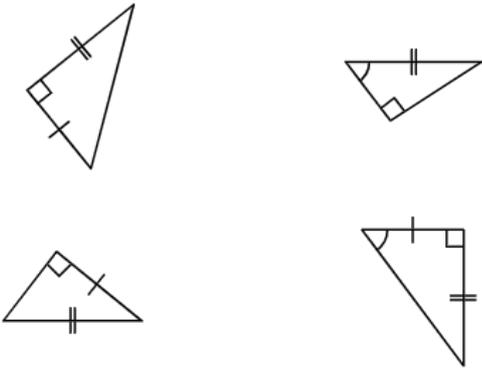original   scaled
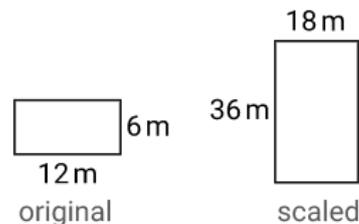
scale factor = ☐

Q8

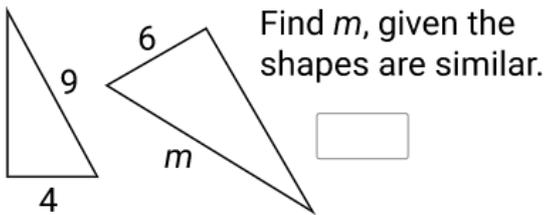Using the SAS congruence test, which two triangles are congruent?
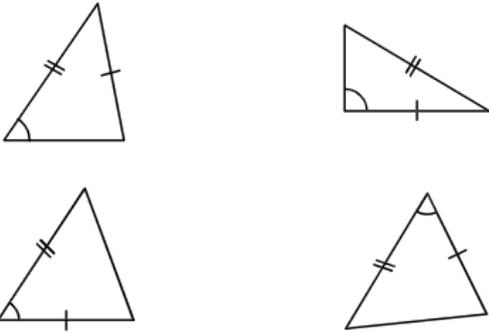
Q9

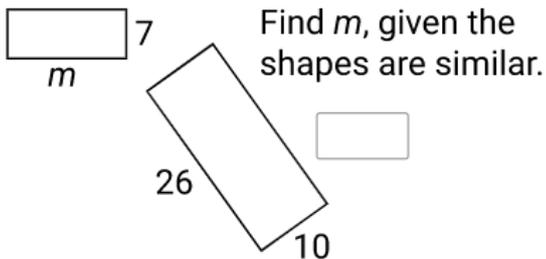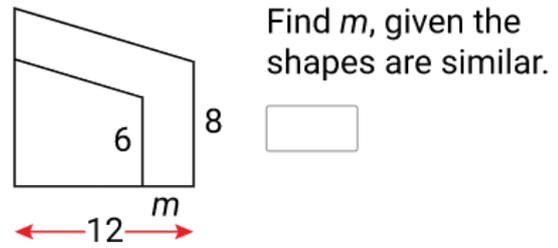Using the SAS congruence test, which two triangles are congruent?

Q10

Find *m*, given the shapes are similar.

6

9

m

4

Q11

7

m

Find *m*, given the shapes are similar.

26

10

Q12

6

8

m

12

Find *m*, given the shapes are similar.

Q13

15

9

m

12

Find *m*, given the shapes are similar.

Q14

Prove that ΔDON|||ΔBOP.

In ΔDON and ΔBOP.

$$\frac{BO}{\boxed{}} = \frac{\boxed{}}{15} = \boxed{}$$

$$\frac{PO}{\boxed{}} = \frac{21.6}{\boxed{}} = \boxed{}$$

$$\frac{\boxed{}}{DN} = \frac{\boxed{}}{\boxed{}} = \boxed{}$$

D
21.6 27° P
15
x
20
24
N 18 O
18 74°
B
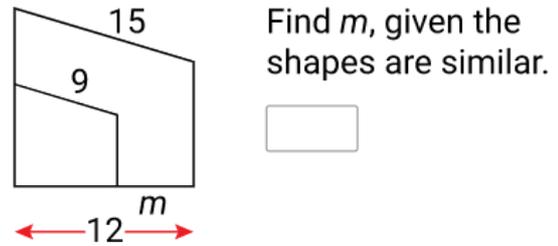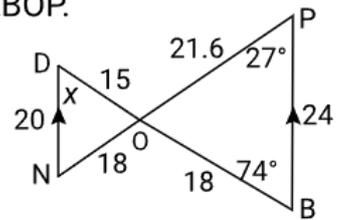
∴ ΔDON|||ΔBOP

(_____)

Hence find the value of *x*.

$\boxed{}^{\circ}$

Q15

Prove that ΔXPY|||ΔXQZ.

In ΔXPY and ΔXQZ.

∠ ⬚ is common

∠XYP = ∠ ⬚ (⬚)
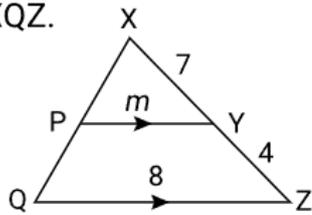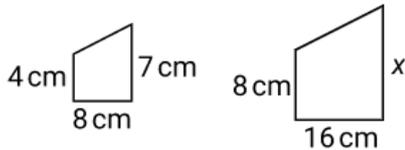
∴ ΔXPY|||ΔXQZ

(⬚)

Hence find the value of *m*.

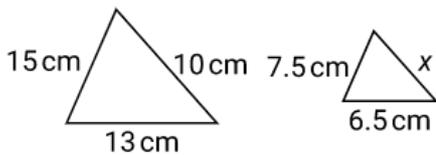⬚ (1 d.p.)

Q16

Consider the similar figures.

Find the scale factor.

⬚

Find the value of *x*.
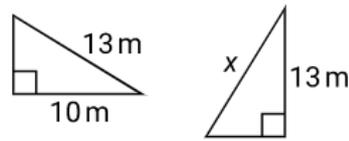
⬚ cm

Q17

Consider the similar figures.

Find the scale factor.

⬚

Find the value of *x*.

⬚ cm

Q18

Consider the similar figures.

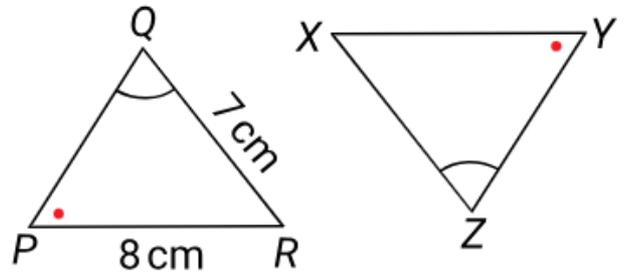Find the scale factor.

⬚

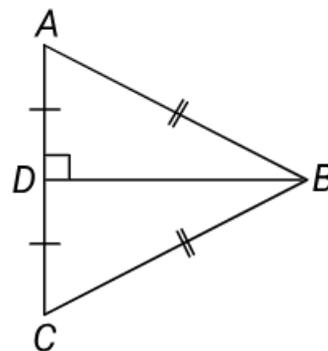Find the value of *x*.

⬚ m

Q19

These two triangles are congruent.

Which side must be equal to 7 cm?

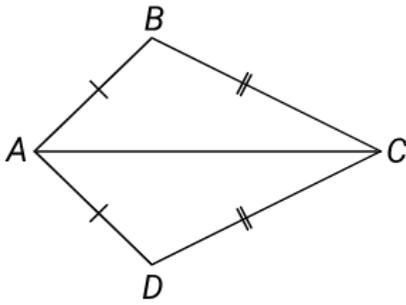XY   YZ   XZ   QP

Q20

ΔABD is congruent to ΔCBD.

Which angle must be equal to ∠DAB?

∠ABD   ∠CDB   ∠CBD   ∠DCB
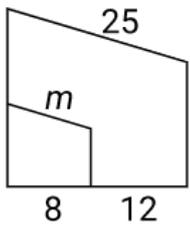
Q21

Which test proves the two triangles congruent? $\triangle ABC \equiv \triangle ADC$.
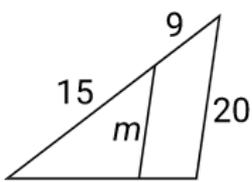

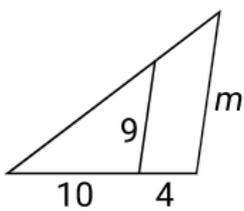○ RHS   ○ SSS   ○ SAS   ○ AAS

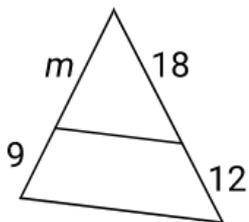## Q22

Find m, given the shapes are similar.

[ ]

Q23

Find m, given the shapes are similar.

[ ]

Q24

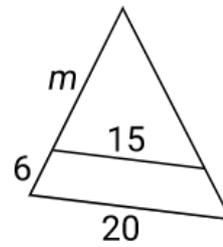Find m, given the shapes are similar.
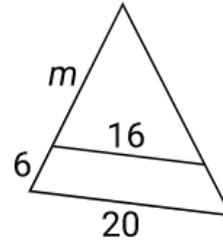
[ ]

Q25

Find m, given the shapes are similar.

[ ]

Q26

Find m, given the shapes are similar.

[ ]

Q27

Find m, given the shapes are similar.

[ ]

Q28

Prove that $\triangle AEN /// \triangle DEP$.
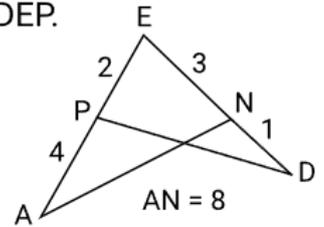
In $\triangle AEN$ and $\triangle DEP$.

$\angle$ [ ] is common

$\dfrac{EN}{\Box} = \dfrac{\Box}{2} = \Box$

$\dfrac{EA}{\Box} = \dfrac{\Box}{4} = \Box$

$\therefore \triangle AEN /// \triangle DEP$

([   ])

Hence find the length PD.

[ ] (1 d.p.)

Q29

Prove that ΔACB|||ΔAED.

In ΔACB and ΔAED.

∠ ☐ is common

∠ACB = ∠ ☐ (☐)
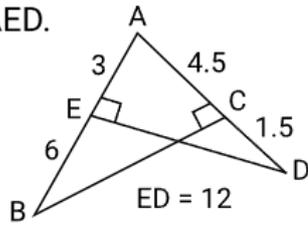
∴ ΔACB|||ΔAED

(☐)

Hence find the length BC.

☐

Q30

Prove that ΔMPN|||ΔNOP.

In ΔMPN and ΔNOP.

$\dfrac{MN}{☐} = \dfrac{☐}{12} = ☐$

$\dfrac{MP}{☐} = \dfrac{☐}{8} = ☐$

$\dfrac{NP}{☐} = \dfrac{12}{☐} = ☐$

∴ ΔMPN|||ΔNOP

(☐)

Hence find the value of m.

☐ °