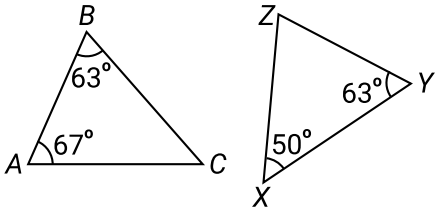
Year 9 Class 14 questions

Q1

The two shapes below are similar.



Which angle is matching to $\angle C$?

○ $\angle Z$ ● $\angle X$ ○ $\angle Y$

Which side is matching to YZ?

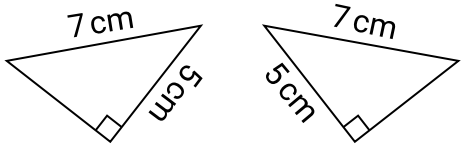
○ BC ○ AC ● AB

Complete the pair of matching angles.

$\angle A = \angle$ [ ] $\angle Z$

Q2

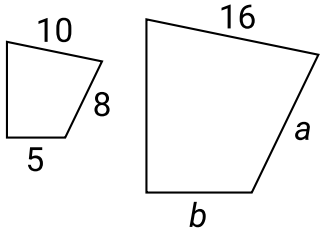
Which test proves the two triangles are congruent?



● RHS ○ SSS ○ SAS ○ AAS

Q3

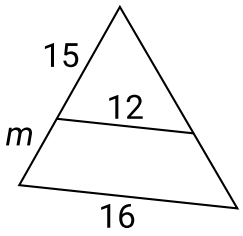
Find the values of a and b given the shapes are similar.



$a =$ [ ] 12.8

$b =$ [ ] 8

Q4

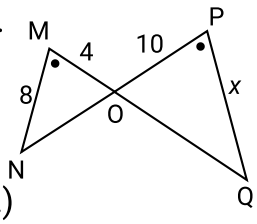


Find m, given the shapes are similar.

[ ] 5

Q5

Prove that $\Delta MON /// \Delta POQ$.



In ΔMON and ΔPOQ.

$\angle M = \angle$ [P] (given)

$\angle MON = \angle$ [POQ] (vert.opp.)

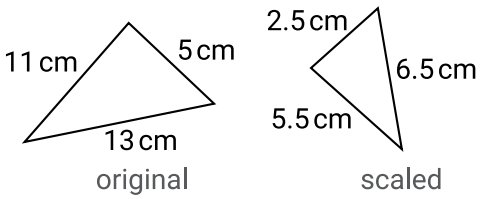
$\therefore \Delta MON /// \Delta POQ$ (equiangular)

Hence find the value of x.

[ ] 20

Q6

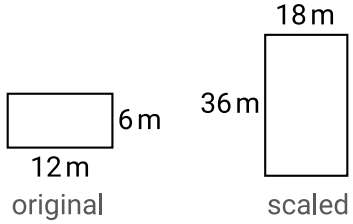
Find the scale factor for the similar figures.



scale factor = [ ] 0.5

Q7

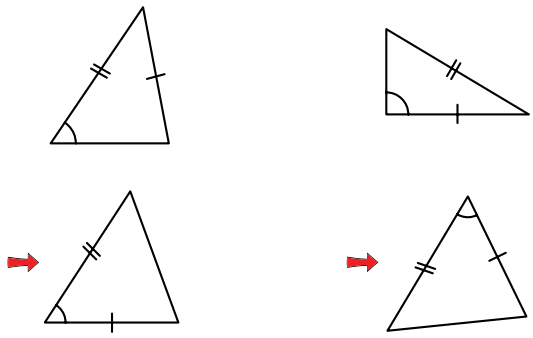
Find the scale factor for the similar figures.



scale factor = [ ] 3

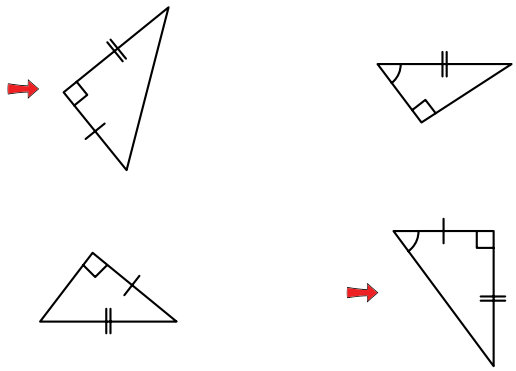
Q8

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

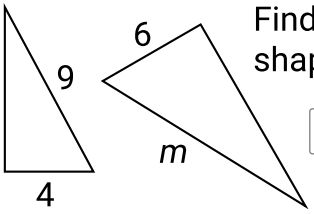


Q9

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



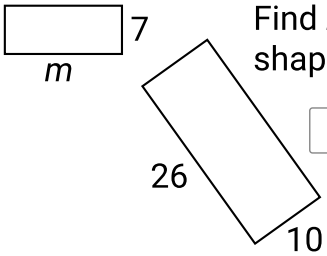
Q10



Find *m*, given the shapes are similar.

[ ] 13.5

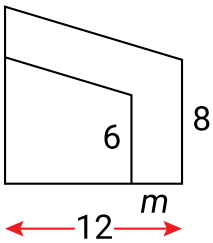
Q11



Find *m*, given the shapes are similar.

[ ] 18.2

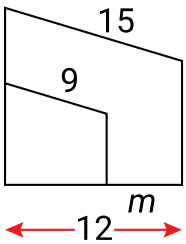
Q12



Find *m*, given the shapes are similar.

[ ] 3

Q13



Find *m*, given the shapes are similar.

[ ] 4.8

Q14

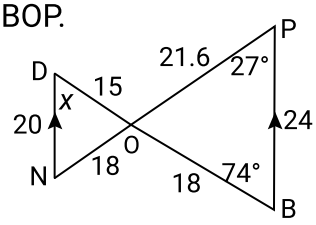
Prove that ΔDON///ΔBOP.

In ΔDON and ΔBOP.

$\frac{BO}{DO} = \frac{18}{15} = [\ ]$ 1.2

$\frac{PO}{NO} = \frac{21.6}{18} = [\ ]$ 1.2

$\frac{PB}{DN} = \frac{24}{20} = [\ ]$ 1.2



∴ ΔDON///ΔBOP

([ ])

corr. sides in same ratio

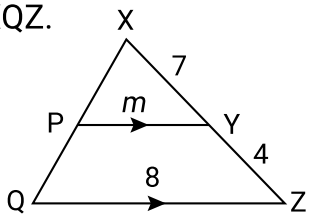
Hence find the value of *x*.

[ ]° 74°

Q15

Prove that ΔXPY///ΔXQZ.

In ΔXPY and ΔXQZ.



∠ [ ] is common
X

∠XYP = ∠ [ ]
XZQ

([ ])
corr. ∠'s. PY//QZ

∴ ΔXPY///ΔXQZ

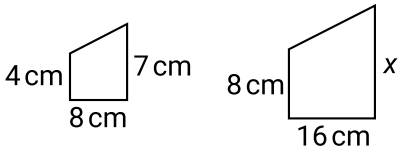
([ ])
equiangular

Hence find the value of *m*.

[ ] (1 d.p.) 5.1

Q16

Consider the similar figures.



Find the scale factor.

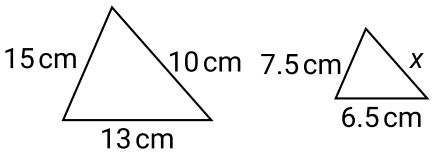
[ ] 2

Find the value of *x*.

[ ] cm 14 cm

Q17

Consider the similar figures.



Find the scale factor.

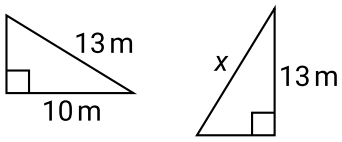
[ ] 0.5

Find the value of *x*.

[ ] cm 5 cm

Q18

Consider the similar figures.



Find the scale factor.

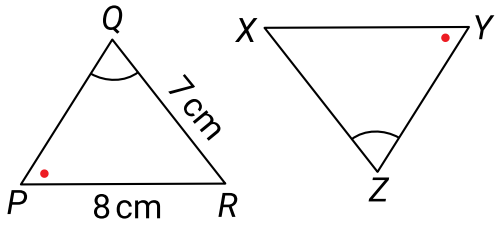
[ ] 1.3

Find the value of *x*.

[ ] m 16.9 m

Q19

These two triangles are congruent.

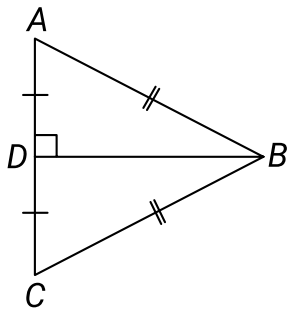


Which side must be equal to 7 cm?

XY *YZ* ➡*XZ* *QP*

Q20

Δ*ABD* is congruent to Δ*CBD*.

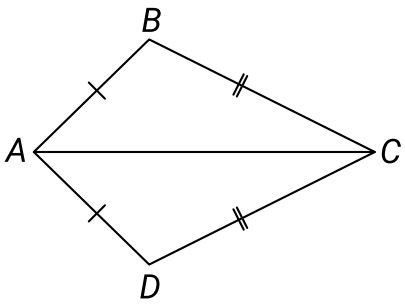


Which angle must be equal to ∠*DAB*?

∠*ABD* ∠*CDB* ∠*CBD* ➡∠*DCB*

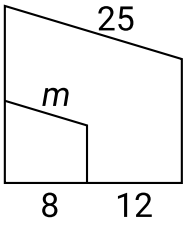
Q21

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



○ RHS → ○ SSS ○ SAS ○ AAS

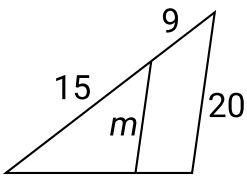
Q22



Find *m*, given the shapes are similar.

[ ] 10

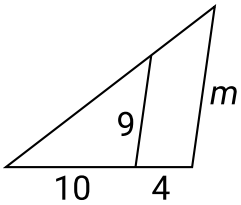
Q23



Find *m*, given the shapes are similar.

[ ] 12.5

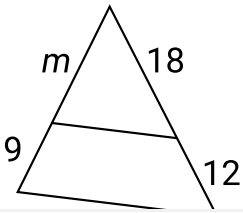
Q24



Find *m*, given the shapes are similar.

[ ] 12.6

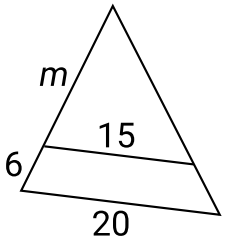
Q25



Find *m*, given the shapes are similar.

[ ] 13.5

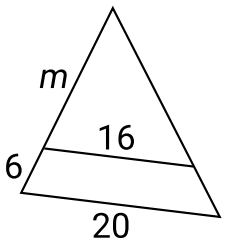
Q26



Find *m*, given the shapes are similar.

[ ] 18

Q27

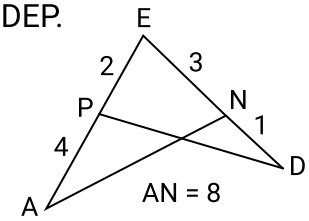


Find *m*, given the shapes are similar.

[ ] 24

Q28

Prove that $\Delta AEN /// \Delta DEP$.



In ΔAEN and ΔDEP.

$\angle$ [E] is common

$\frac{EN}{EP} = \frac{3}{2} =$ [1.5]

$\frac{EA}{ED} = \frac{6}{4} =$ [1.5]

$\therefore \Delta AEN /// \Delta DEP$

([2 pairs of sides in ratio, included ∠'s equal])

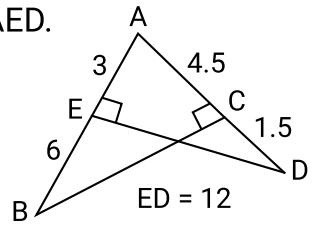
Hence find the length PD.

[ ] (1 d.p.) 5.3

Q29

Prove that ΔACB///ΔAED.

In ΔACB and ΔAED.



∠ [A] is common

∠ACB = ∠ [AED]

([given])

∴ ΔACB///ΔAED

([equiangular])

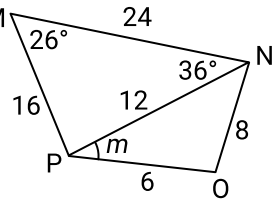
Hence find the length BC.

[ ] 18

Q30

Prove that ΔMPN///ΔNOP.

In ΔMPN and ΔNOP.



$\frac{MN}{NP} = \frac{24}{12} = \frac{\square}{2}$

$\frac{MP}{NO} = \frac{16}{8} = \frac{\square}{2}$

$\frac{NP}{PO} = \frac{12}{6} = \frac{\square}{2}$

∴ ΔMPN///ΔNOP

([corr. sides in same ratio])

Hence find the value of m.

[ ]° 36°