Similarity Worksheet
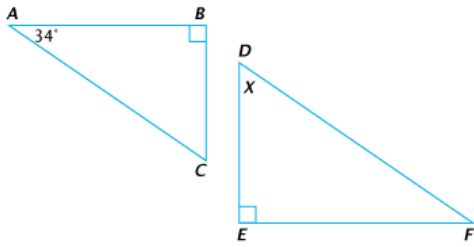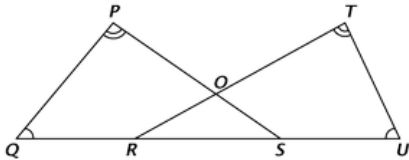
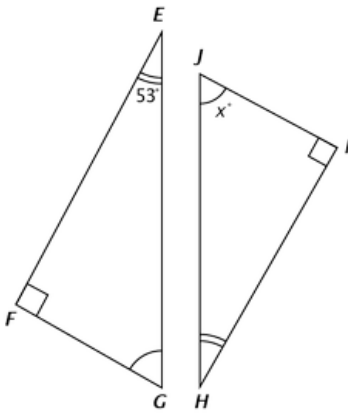1) In the following diagram, $\triangle CBA$ and $\triangle DEF$ are similar triangles and $m\angle A = 34°$.

What is the value of x?

2) Triangle QPR and Triangle UTS are shown. $\angle P \cong \angle T$, $\angle Q \cong \angle U$ and $m\angle RSP = 37.5°$.
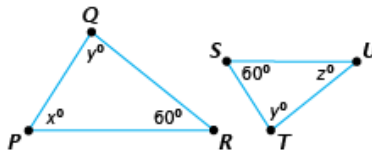

What is the measure of $\angle ROS$?

4) In the following diagram, $\triangle EFG$ and $\triangle HIJ$ are similar triangles and $m\angle E = 53°$.

What is the value of x?

3) In the diagram below, triangle PQR is similar to triangle STU.

Not drawn to scale

Based on the diagram, select all the equations that are true.

☐ $x = 60$
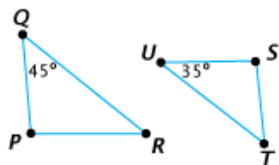
☐ $x = 120$

☐ $y = 60$ ☐ $z = 60$

☐ $y = 70$ ☐ $z = 120$

5) In the diagram below, triangle *PQR* is similar to triangle *STU* and $m\angle R = m\angle U$.
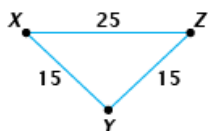

Not drawn to scale

Find the following measurements.

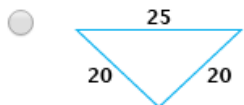$m\angle P =$ [____]$^\circ$

$m\angle S =$ [____]$^\circ$

6) Part 1

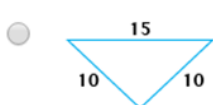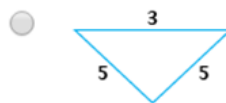The side lengths in triangle *XYZ* are shown below.

Not drawn to scale

Which triangle is similar to triangle *XYZ*?

○
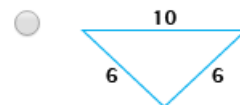**Not drawn to scale**

○
Not drawn to scale

○
Not drawn to scale
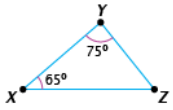
○
Not drawn to scale

Part 2

Which is a correct explanation of how you know the triangles are similar?

○ The triangles have exactly one pair of corresponding congruent sides.

○ Each pair of corresponding side lengths is related by a scale factor of $\frac{2}{5}$.

○ Each pair of corresponding side lengths is related by a scale factor of $\frac{3}{5}$.

○ The difference between corresponding side lengths is equal for each pair of sides.

7) Part 1

The measures of two angles in triangle *XYZ* are shown below.
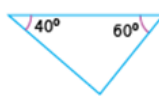

Not drawn to scale

Which triangle is similar to triangle *XYZ*?

○ 60° 75° — Not drawn to scale

○ 40° 75° — Not drawn to scale

○ 40° 60° — Not drawn to scale
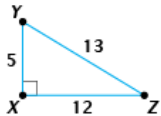
○ 45° 65° — Not drawn to scale

Part 2

Which is a correct explanation of how you know the triangles are similar?

○ Both triangles have three interior angles.

○ All pairs of corresponding angle measures are equal.

○ Exactly one pair of corresponding angle measures are equal.

○ The sum of the two given angle measures in the one triangle is equal to the sum of the two given angle measures in the other triangle.
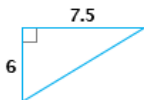
8) Part 1

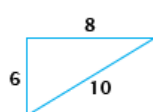The measures of three sides and one angle in triangle *XYZ* are shown below.
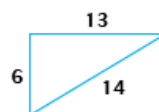

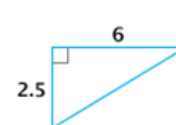Not drawn to scale

Which triangle is similar to triangle *XYZ*?

○ 7.5 6 — Not drawn to scale

○ 8 6 10 — Not drawn to scale

○ 13 6 14 — Not drawn to scale
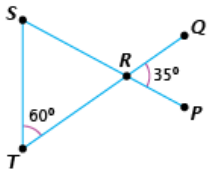
○ 6 2.5 — Not drawn to scale

Part 2

Which is a correct explanation of how you know the triangles are similar?

○ Exactly one pair of corresponding angle measures are equal.

○ The difference between corresponding side lengths is equal for each pair of sides.

○ Both triangles are right and each pair of corresponding leg lengths is related by a scale factor of 4.

○ Both triangles are right and each pair of corresponding leg lengths is related by a scale factor of 0.5.
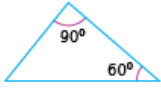
9) Part 1

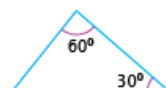Consider triangle *RST* in the diagram below.

Not drawn to scale

Given the information in the diagram, which triangle is similar to triangle *RST*?

Not drawn to scale   **Not drawn to scale**   **Not drawn to scale**   **Not drawn to scale**

Part 2

Which fact is needed to explain how you know the measures of the angles in triangle *RST*?

○ The measures of vertical angles are equal.

○ The measures of complementary angles add up to 90°.

○ When parallel lines are cut by a transversal, the measures of corresponding angles are equal.

○ If two pairs of corresponding angle measures are equal for two triangles, then the triangles are similar.

10)

In the figure below, $\triangle GHI$ and $\triangle XYZ$ are similar. Identify possible values for side lengths GH, HI, and XZ.
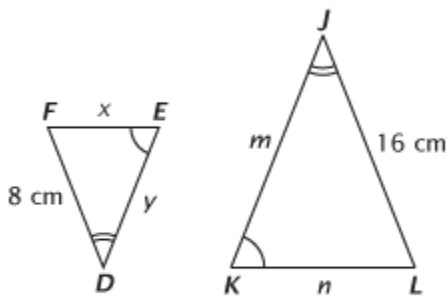
Note: Figure not drawn to scale.
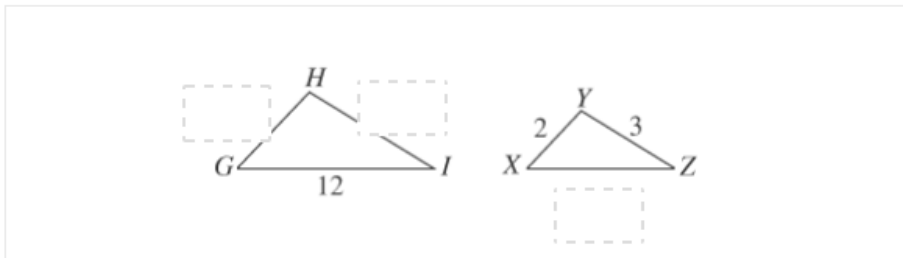
11)

Three images of overlapping triangles are shown. Two triangles are listed under each image. Determine if the information in the image is enough to prove the triangles similar.
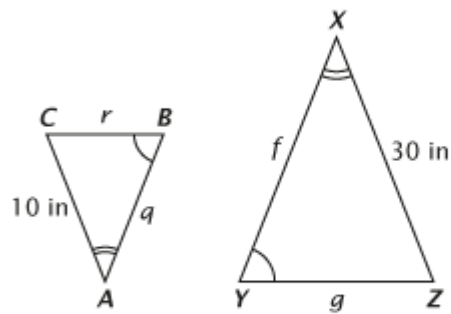

$\triangle ABC$ and $\triangle EDC$ $\triangle ABC$ and $\triangle EDC$ $\triangle ABC$ and $\triangle EDC$
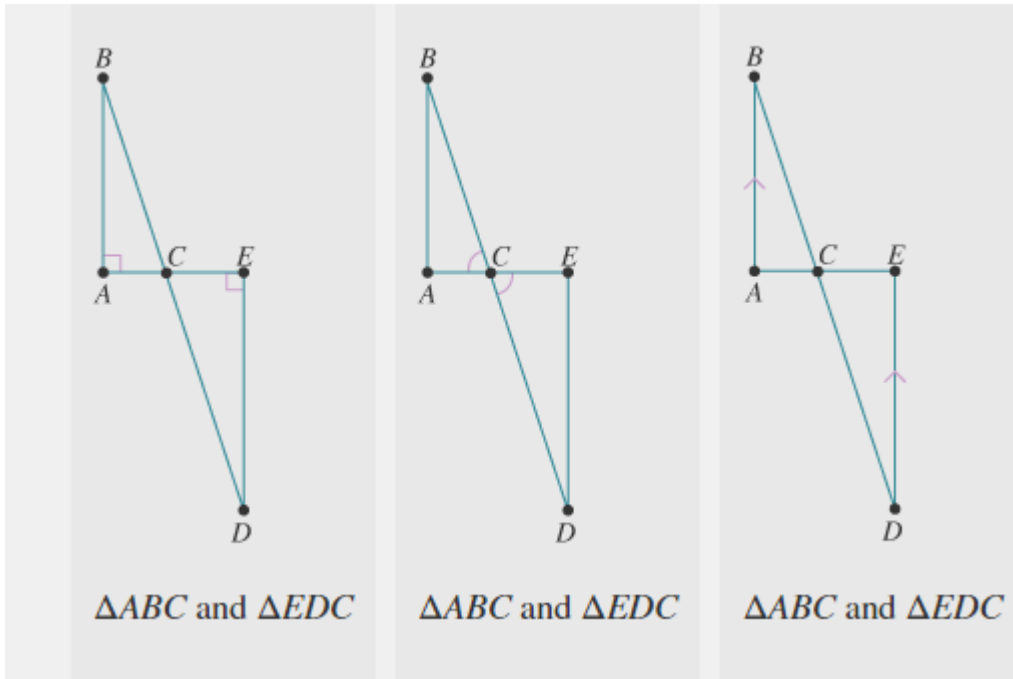
13) Triangles DEF and JKL are similar.

NOTE: Figure not drawn to scale.

What is the ratio of side y to side m?
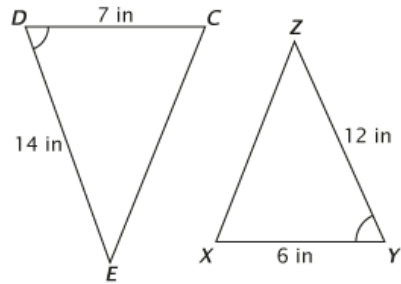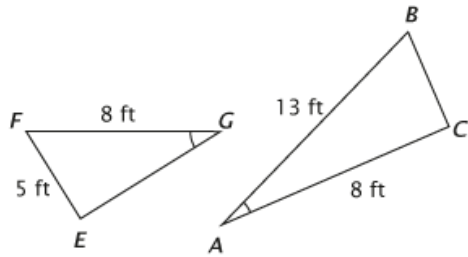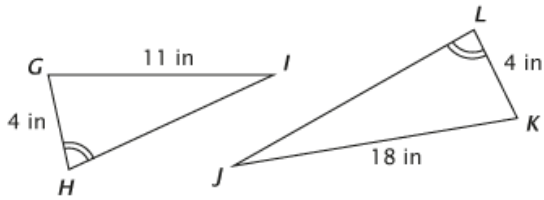
12) Triangle ABC and Triangle XYZ are similar.
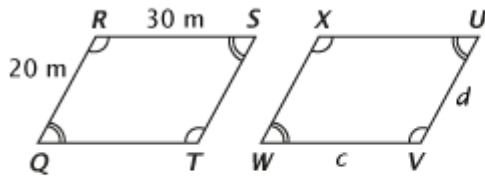

NOTE: Figure not drawn to scale.

What is the ratio of side q to side f?

14) Which pair of triangles must be similar?
NOTE: Figures not drawn to scale.

○

G ———11 in——— I

4 in

H

L
4 in
K
18 in
J

○ D ——7 in—— C

14 in

E

Z

12 in

X   6 in   Y

○

F —8 ft— G
5 ft
E

13 ft

B
8 ft
C
A

15) Look at similar quadrilaterals *WXUV* and *QRST* .

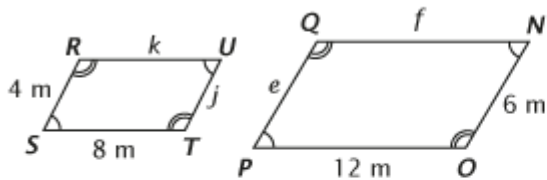R —30 m— S   X ———— U

20 m

Q   T   W   c   V

d

NOTE: Figures not drawn to scale.

If side *c* is equal to 6 m, what is the length of side *d*?

☐ m

16) Figure *RSTU* and Figure *QPON* are shown.

R k U   Q   f   N

4 m

S 8 m T

j
e

P   12 m   O

6 m

NOTE: Figure not drawn to scale.

What is the ratio of the length of side *k* to the length of side *f* ?

☐

What is the ratio of the measure of angle *R* and the measure of angle *Q* ?

☐