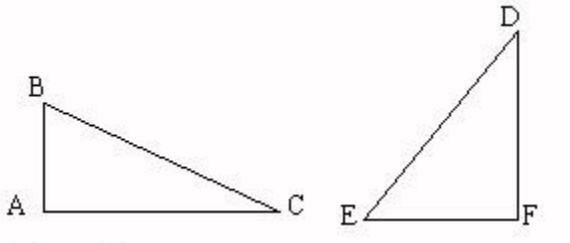
Math 2 - Similar Triangle Worksheet With Applications

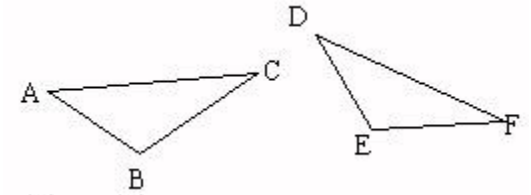
Complete.

1.



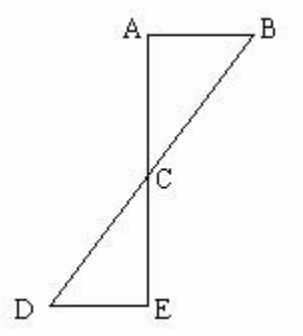
m∠B ≅ ∠E
m∠A ≅ ∠F
AC:FD = 6:12, and ED = 156, what is the length of BC?

2.



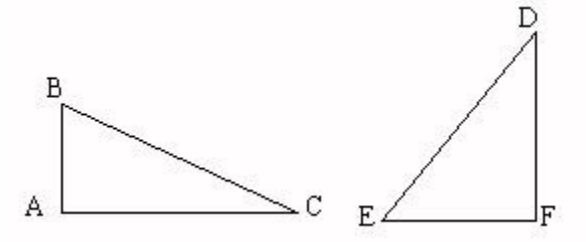
m∠C ≅ ∠F
m∠A ≅ ∠D
The perimeter of smaller triangle ABC is 56. The lengths of two corresponding sides on the triangles are 23 and 138. What is the perimeter of DEF?

3.



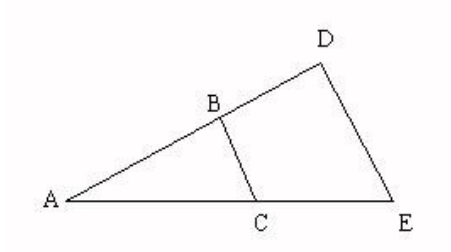
m∠B ≅ ∠E
The length of the sides of ABC are 175, 203, and 210. The length of the smallest side of DEC is 50, what is the length of the longest side of DEC?

4.



m∠A ≅ ∠F
m∠B ≅ ∠E
The length of the sides of ABC are 88, 156, and 100. The perimeter of FED is 2064, what is the length of the longest side of FED?

5.

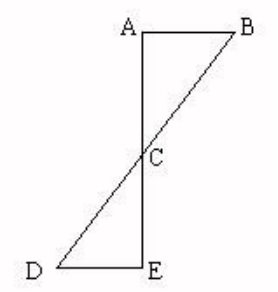


$m\angle C \cong \angle E$

$m\angle B \cong \angle D$

The perimeter of smaller triangle ABC is 80. The lengths of two corresponding sides on the triangles are 33 and 165. One side of ADE is 105. What is the length of the corresponding side on ABC?

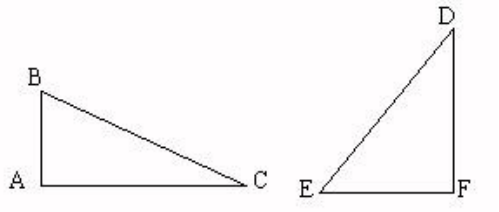
6.



$m\angle B \cong \angle D$

The length of AB is 117m. The lengths of the two corresponding sides (AC and EC) are 44m and 220m. Determine the perimeter of each triangle.

7.



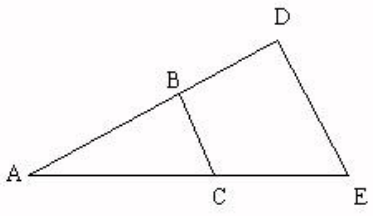
$m\angle A \cong \angle F$

$m\angle B \cong \angle E$

The length of the sides of ABC are 60, 74, and 78. The length of the longest side of FED is 468, what is the perimeter of FED?

8. Triangles JKL and STU are similar. The length of the sides of JKL are 229 + x, 10x - 62, and x + 221. The perimeter of JKL is 808. The perimeter of STU is 707, what is the length of the longest side of STU?

9.



$m\angle A \cong \angle A$

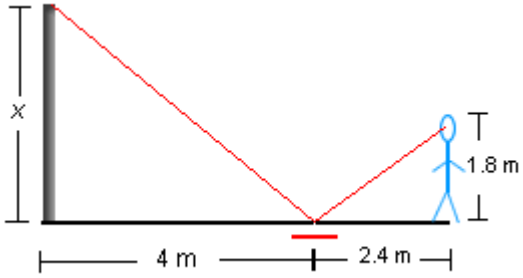
$m\angle C \cong \angle E$

The length of the sides of ABC are 220, 204, and 216. The length of the smallest side of ADE is 408, what is the length of the longest side of ADE?

10. Triangles CDE and IJK are similar. CE:IK = 2:6, and JK = 78, what is the length of DE?

Answer the following. Solve by writing and solving a proportion.

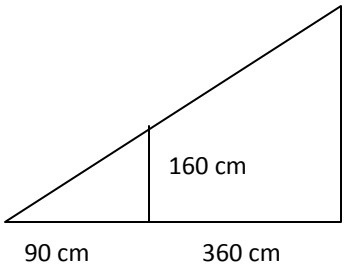
1. A statue, honoring Ray Hnatyshyn (1934–2002), can be found on Spadina Crescent East, near the University Bridge in Saskatoon. Use the information below to determine the unknown height of the statue.



2. A tree 24 feet tall casts a shadow 12 feet long. Brad is 6 feet tall. How long is Brad's shadow? (draw a diagram and solve)

3. A 40-foot flagpole casts a 25-foot shadow. Find the shadow cast by a nearby building 200 feet tall. (draw a diagram and solve)

4. A girl 160 cm tall, stands 360 cm from a lamp post at night. Her shadow from the light is 90 cm long. How high is the lamp post?



5. A tower casts a shadow 7 m long. A vertical stick casts a shadow 0.6 m long. If the stick is 1.2 m high, how high is the tower? (draw a diagram and solve)

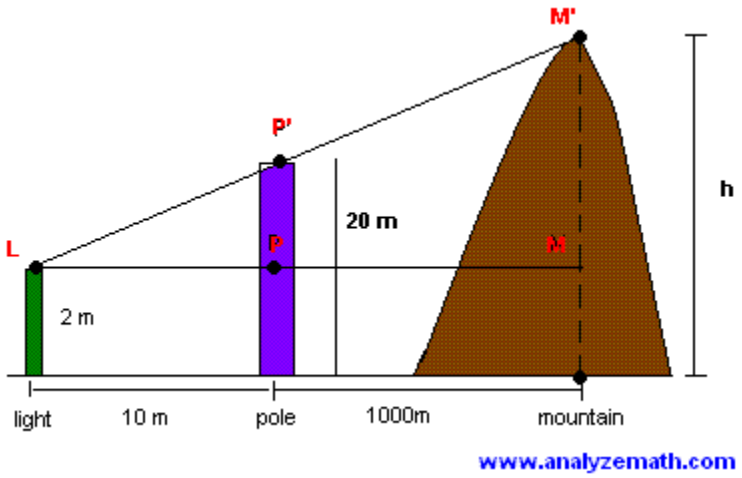
6. A tree with a height of 4m casts a shadow 15 m long on the ground. How high is another tree that casts a shadow which is 20 m long? (draw a diagram and solve)

7. Triangles IJK and TUV are similar. The length of the sides of IJK are 40, 50, and 24. The length of the longest side of TUV is 275, what is the perimeter of TUV? (draw a diagram and solve)

8. Triangles EFG and QRS are similar. The length of the sides of EFG are 144, 128, and 112. The length of the smallest side of QRS is 280, what is the length of the longest side of QRS? (draw a diagram and solve)

9. Triangles CDE and NOP are similar. The perimeter of smaller triangle CDE is 133. The lengths of two corresponding sides on the triangles are 53 and 212. What is the perimeter of NOP?

Problem 2: A research team wishes to determine the altitude of a mountain as follows: They use a light source at L, mounted on a structure of height 2 meters, to shine a beam of light through the top of a pole P' through the top of the mountain M'. The height of the pole is 20 meters. The distance between the altitude of the mountain and the pole is 1000 meters. The distance between the pole and the laser is 10 meters. We assume that the light source mount, the pole and the altitude of the mountain are in the same plane. Find the altitude h of the mountain.



1. A man 6 feet tall casts a shadow that is 11 feet long. A building casts a shadow of 139 feet long. What is the height of the building?

2. A person 5 feet tall casts a shadow that is 10 feet long. A tree casts a shadow that is 116 feet long. How tall is the tree?

3. A sign is 8 feet high and casts a 5-foot shadow while a nearby flagpole casts a 20-foot shadow. How high is the flagpole?

4. The shadow of a 4-foot pole is 6 feet long at the same time the shadow of a tower is 52.5 feet long. How tall is the tower?

5. Ryan is 5 feet tall. His shadow is 9 feet long and the shadow of a building is 36 feet long. How tall is the building?