Similar triangles and indirect measurement worksheet – Grade 9

Grade 9 · Mixed level · 20 questions · **Version X5113**

Name: _____ Date: _____ Score: ___ / 20

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1. A model of a tower is 6 cm tall at a scale of 1 : 1200. How tall is the tower, in metres?

   Answer: _____ m

2. A ramp rises 3 m over a run of 21 m. How high is the ramp 6 m along the run, in metres? Give your answer to two decimal places.

   Answer: _____ m

3. A tree casts an 18 m shadow when a 1.7 m person casts a 3 m shadow. How tall is the tree, in metres?

   Answer: _____ m

4. A 1.8 m student has a 4 m shadow. A flagpole has a 24 m shadow. How tall is the flagpole, in metres?

   Answer: _____ m

5. A tree casts a 20 m shadow when a 1.8 m person casts a 4 m shadow. How tall is the tree, in metres?

   Answer: _____ m

6. A model of a tower is 4 cm tall at a scale of 1 : 600. How tall is the tower, in metres?

   Answer: _____ m

7. A ramp rises 2 m over a run of 24 m. How high is the ramp 4 m along the run, in metres? Give your answer to two decimal places.

   Answer: _____ m

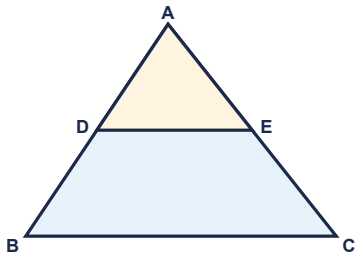
8. Braces in a ramp are parallel. A brace 2 m from the bottom of the ramp is 3 m tall. How tall is a brace 6 m from the bottom, in metres?

   Answer: _____ m

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9. A surveyor sets up similar triangles with matching sides of 10 m and 70 m. The short base is 6 m. How long is the long base, in metres?

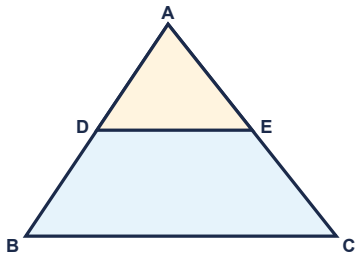


Answer: _____ m

10. Ethan's eyes are 1.6 m high. A mirror on the ground is 2 m from Ethan and 14 m from a building. How tall is the building, in metres?

Answer: _____ m

11. In △ABC, DE ∥ BC, AD = 3, DB = 6 and DE = 6. How long is BC?

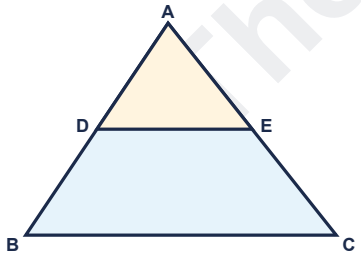


Answer: _____

12. Braces in a ramp are parallel. A brace 5 m from the bottom of the ramp is 1.5 m tall. How tall is a brace 15 m from the bottom, in metres?

Answer: _____ m

13. In △ABC, DE ∥ BC, AD = 4, DB = 8 and DE = 11. How long is BC?



Answer: _____

14. Dev's eyes are 1.8 m high. A mirror on the ground is 1.5 m from Dev and 7.5 m from a building. How tall is the building, in metres?

Answer: _____ m

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15. A 1.5 m person walks away from a 9 m lamp post. When the person is 35 m from the post, how long is the shadow, in metres?

    Answer: _____ m

16. A camera's film is 3 cm behind the lens. A 3 m person is 20 m in front of it. How tall is the image, in cm?

    Answer: _____

17. A thumb 2 cm wide, held 60 cm from the eye, just covers a 15 m wide building. How far away is the building, in metres?

    Answer: _____ m

18. Two poles are 5 m and 15 m tall and 60 m apart. Wires join the top of each to the foot of the other. How high above the ground do the wires cross, in metres?

    Answer: _____ m

19. A 1.7 m person walks away from an 8.5 m lamp post. When the person is 40 m from the post, how long is the shadow, in metres?

    Answer: _____ m

20. A 1.6 m person walks away from a 9.6 m lamp post. When the person is 55 m from the post, how long is the shadow, in metres?

    Answer: _____ m

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Answer key · Version X5113

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1. **72**
2. **0.86**
3. **10.2**
4. **10.8**
5. **9**
6. **24**
7. **0.33**
8. **9**
9. **42**
10. **11.2**
11. **18**
12. **4.5**
13. **33**
14. **9**
15. **7**
16. **0.45**
17. **450**
18. **3.75**
19. **10**
20. **11**

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