Trigonometry in real life: ladders, ramps, kites, shadows and cliffs worksheet – Grade 10

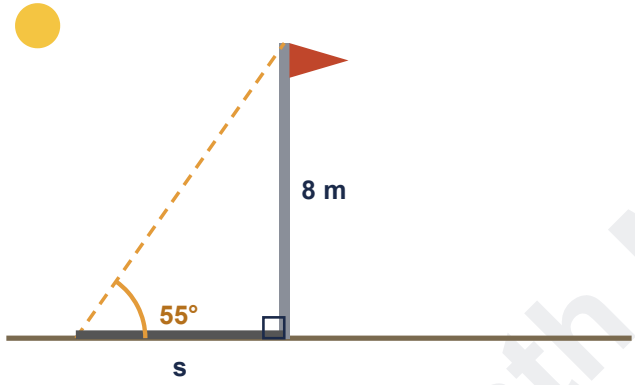
Grade 10 · Mixed level · 20 questions · **Version X9202**

Name: _____ Date: _____ Score: ___ / 20

Scan to check answers + earn stars

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1. A flagpole 8 m tall stands on level ground. When the sun is 55° above the horizon, how long is its shadow? (m, to the nearest tenth)



Answer: _____ m

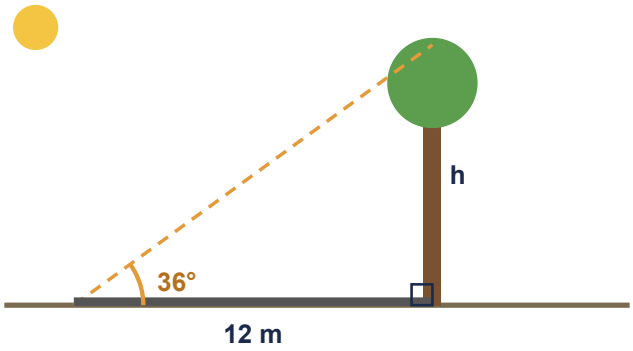
2. A wheelchair ramp is 5 m long and slopes up at 5° to the ground. How high does it rise? (m, to the nearest tenth)



Answer: _____ m

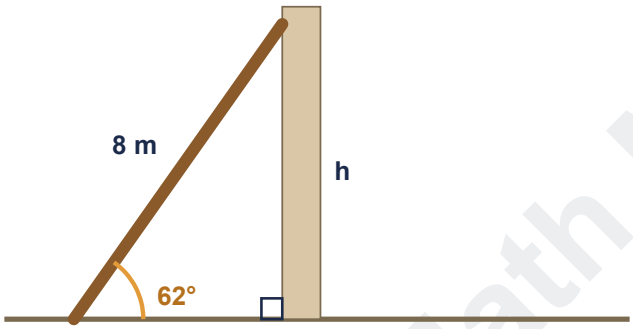
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3. A tree casts a shadow 12 m long when the sun is 36° above the horizon. How tall is the tree? (m, to the nearest tenth)



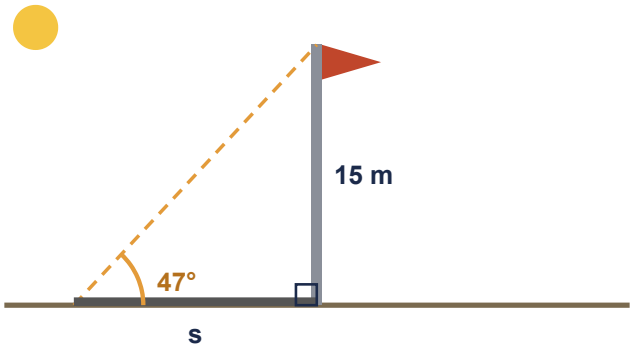
Answer: _____ m

4. A ladder 8 m long leans against a wall and makes a 62° angle with the ground. How high up the wall does it reach? (m, to the nearest tenth)



Answer: _____ m

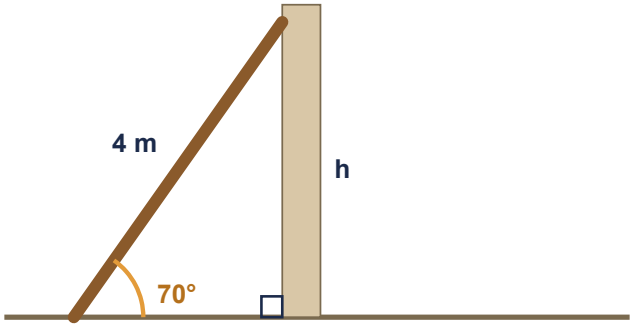
5. A flagpole 15 m tall stands on level ground. When the sun is 47° above the horizon, how long is its shadow? (m, to the nearest tenth)



Answer: _____ m

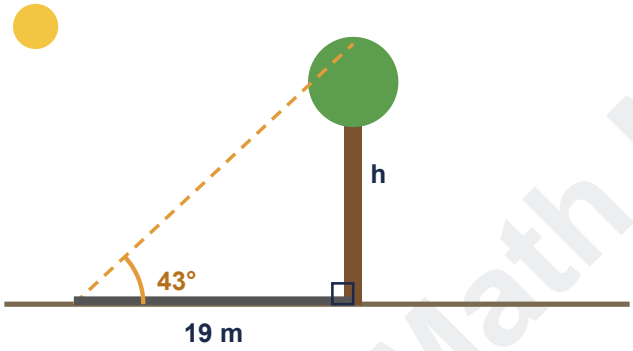
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6. A ladder 4 m long leans against a wall and makes a 70° angle with the ground. How high up the wall does it reach? (m, to the nearest tenth)



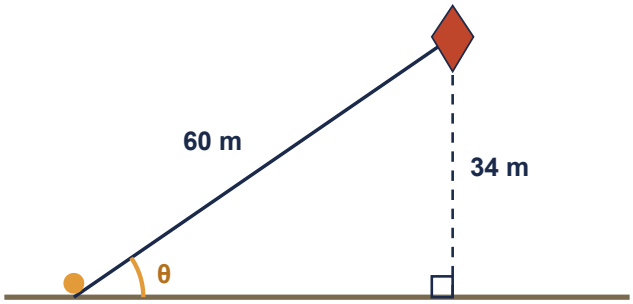
Answer: _____ m

7. A tree casts a shadow 19 m long when the sun is 43° above the horizon. How tall is the tree? (m, to the nearest tenth)



Answer: _____ m

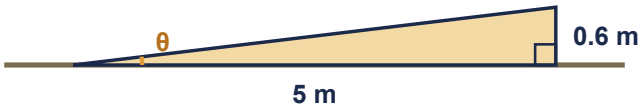
8. A kite is flying on 60 m of string. The kite is 34 m higher than the person's hand. What angle does the string make with the horizontal? (degrees, to the nearest degree)



Answer: _____ °

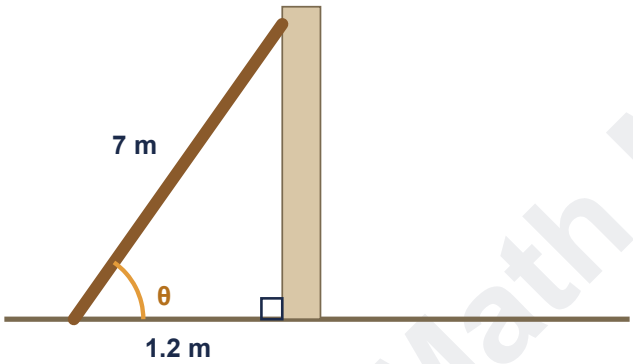
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9. A ramp rises 0.6 m over a horizontal distance of 5 m. What angle does it make with the ground? (degrees, to the nearest degree)



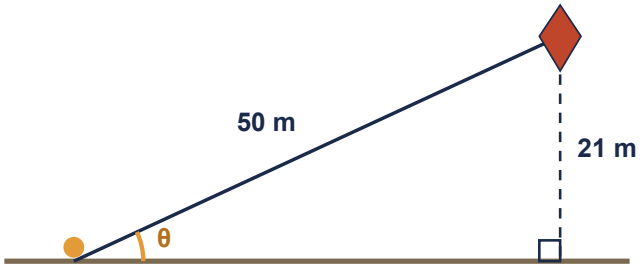
Answer: _____ °

10. The foot of a ladder 7 m long is 1.2 m from a wall. What angle does the ladder make with the ground? (degrees, to the nearest degree)



Answer: _____ °

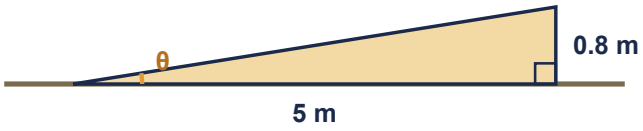
11. A kite is flying on 50 m of string. The kite is 21 m higher than the person's hand. What angle does the string make with the horizontal? (degrees, to the nearest degree)



Answer: _____ °

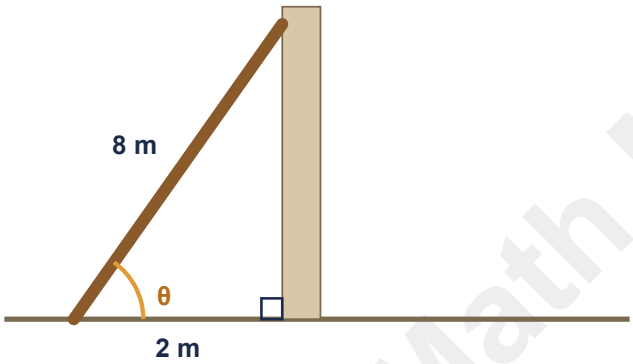
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12. A ramp rises 0.8 m over a horizontal distance of 5 m. What angle does it make with the ground? (degrees, to the nearest degree)



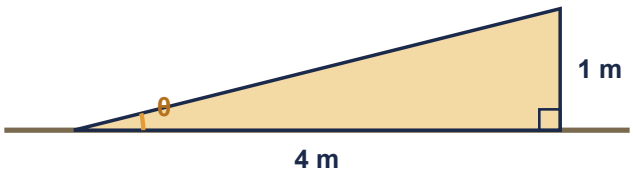
Answer: _____ °

13. The foot of a ladder 8 m long is 2 m from a wall. What angle does the ladder make with the ground? (degrees, to the nearest degree)



Answer: _____ °

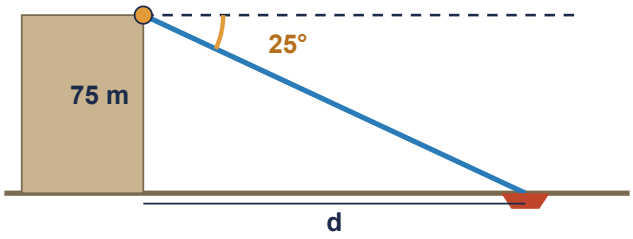
14. A ramp rises 1 m over a horizontal distance of 4 m. What angle does it make with the ground? (degrees, to the nearest degree)



Answer: _____ °

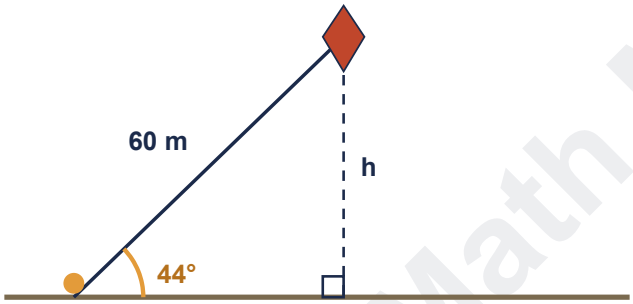
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15. From the top of a 75 m cliff, the angle of depression to a boat is 25°. How far is the boat from the foot of the cliff? (m, to the nearest tenth)



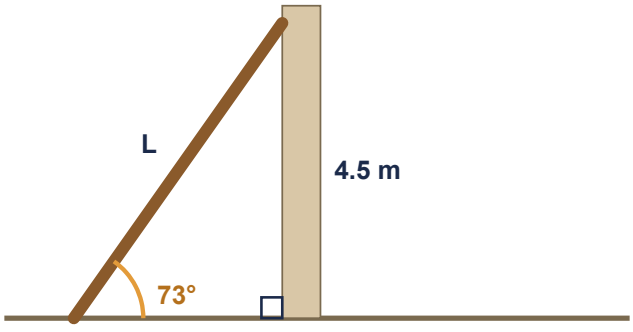
Answer: _____ m

16. A kite flies on 60 m of string at an angle of 44° with the horizontal. The person holds the string 1.5 m above the ground. How high above the ground is the kite? (m, to the nearest tenth)



Answer: _____ m

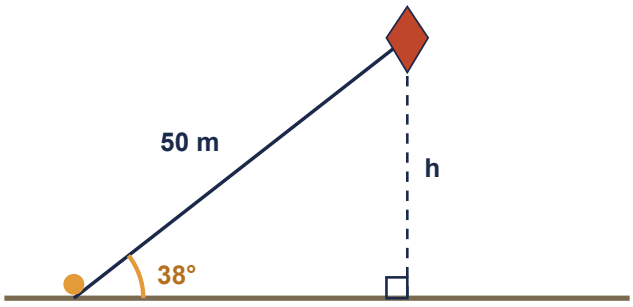
17. A ladder must reach 4.5 m up a wall, and for safety it must make a 73° angle with the ground. How long must the ladder be? (m, to the nearest tenth)



Answer: _____ m

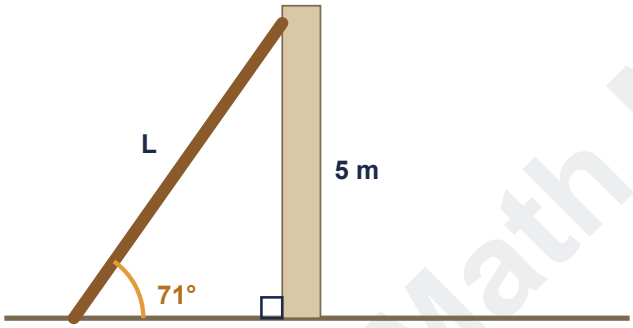
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18. A kite flies on 50 m of string at an angle of 38° with the horizontal. The person holds the string 1.5 m above the ground. How high above the ground is the kite? (m, to the nearest tenth)



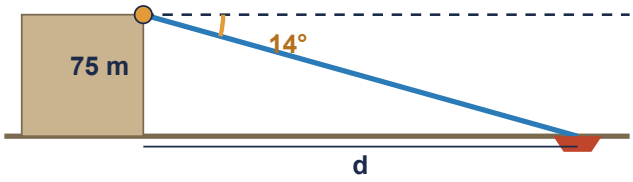
Answer: _____ m

19. A ladder must reach 5 m up a wall, and for safety it must make a 71° angle with the ground. How long must the ladder be? (m, to the nearest tenth)



Answer: _____ m

20. From the top of a 75 m cliff, the angle of depression to a boat is 14°. How far is the boat from the foot of the cliff? (m, to the nearest tenth)



Answer: _____ m

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Answer key · Version X9202

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1. **5.6**
2. **0.4**
3. **8.7**
4. **7.1**
5. **14**
6. **3.8**
7. **17.7**
8. **35**
9. **7**
10. **80**
11. **25**
12. **9**
13. **76**
14. **14**
15. **160.8**
16. **43.2**
17. **4.7**
18. **32.3**
19. **5.3**
20. **300.8**

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