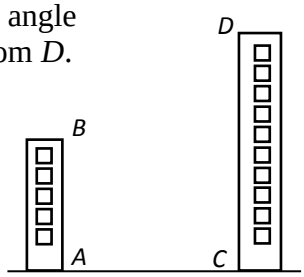
# Applications of Trigonometry
# Multiple Choice Question

**1. [14-15 Final Exam #10]**

In the figure, *AB* and *CD* are the heights of two buildings on the same level ground. If *AB* = 9 m, *AC* = 20 m and the angle of elevation of *D* from *A* is 50°, find the angle of depression of *B* from *D*.

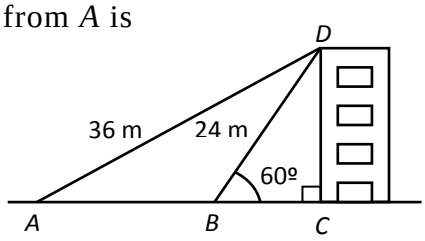
**A.** 21.3°
**B.** 24.2°
**C.** 36.6°
**D.** 53.4°




**2. [15-16 Final Exam #11]**

The angle of elevation of *D* from *B* is 60°. If the distance of *D* from *A* and *B* are 36 m and 24 m respectively, then the angle of elevation of *D* from *A* is

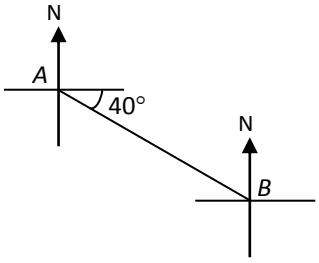
**A.** 35.3°.
**B.** 49.1°.
**C.** 54.7°.
**D.** 70.5°.




**3. [15-16 Final Exam #10]**

The compass bearing of *A* from *B* is

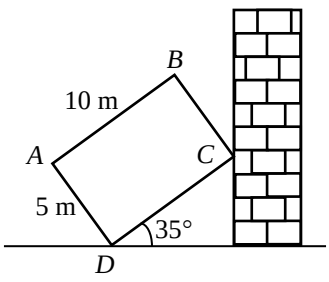
**A.** N40°W.
**B.** N50°W.
**C.** W40°N.
**D.** W50°N.




**4. [15-16 Final Exam #29]**

A rectangular box *ABCD* leans against a vertical wall as shown. Find the height of *B* from the ground.

**A.** 8.60 m
**B.** 9.83 m
**C.** 11.0 m
**D.** 12.3 m

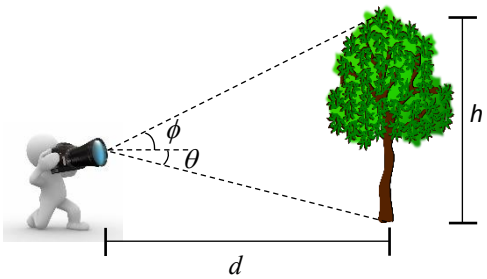


**5. [16-17 Final Exam #11]**

Find the inclination of a road with the gradient of $1:12$.

**A.** 0.00145°
**B.** 0.0833°
**C.** 4.76°
**D.** 12°

**6. [16-17 Final Exam #22]**




Refer to the figure, $d =$

**A.** $\dfrac{h}{\tan\theta + \tan\phi}$.

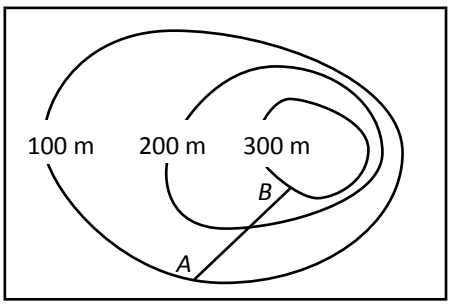
**B.** $\dfrac{h}{\dfrac{1}{\tan\theta} + \dfrac{1}{\tan\phi}}$.

**C.** $h(\tan\theta + \tan\phi)$.

**D.** $h(\dfrac{1}{\tan\theta} + \dfrac{1}{\tan\phi})$.

**7. [17-18 Final Exam #9]**

The figure shows part of a contour map drawn in the scale of 1 : 30 000. If road *AB* is 3 cm on the map, find the gradient of *AB*.




**A.** $\frac{2}{900}$

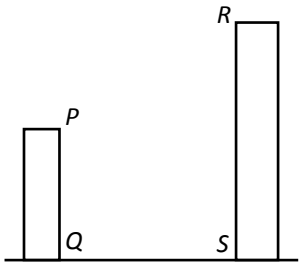
**B.** $\frac{1}{50}$

**C.** $\frac{1}{9}$

**D.** $\frac{2}{9}$

**8. [17-18 Final Exam #20]**

In the figure, *PQ* and *RS* are the heights of two buildings on the same level ground. If *PQ* = 45 m, *RS* = 65 m and the angle of depression of *P* from *R* is 55°, find the angle of elevation of *R* from *Q*.




**A.** 77.8°

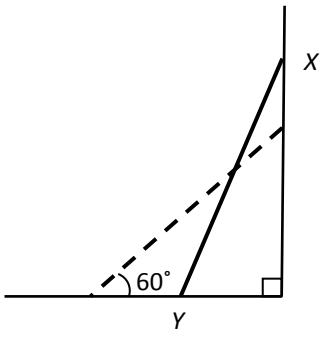
**B.** 72.7°

**C.** 66.2°

**D.** 23.7°

**9. [17-18 Final Exam #21]**

A ladder *XY* is leaning against a vertical wall such that the angle between the ladder and the ground is *a*. The ladder then slides down such that the distance between the bottom of ladder and the wall is doubled the original distance and it makes an angle of 60° with the ground. Find *a* correct to 3 significant figures.




**A.** 64.3°

**B.** 75.0°

**C.** 75.5°

**D.** 80.4°

**10. [18-19 Standardized Test 2, 9]**

*A* and *B* are two points on the ground such that *AB* = 40 m. If the angle of elevation of the top of a building from *A* and *B* are 31° and 62° respectively, find the height of the building.

**A.** 35.3 m

**B.** 48.1 m

**C.** 58.8 m

**D.** 71.3 m