Trigonometry: Solving Triangles & Angles of Elevation

MEMORANDUM

Name: ..... Class: .....

Date: .....

MARK ____ / 17

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

1 Find x: opposite a $40°$ angle, hypotenuse 15 cm. (2)

$15 \sin 40° = \mathbf{9{,}64\ cm}$ ✓✓ (2)

2 Find x: adjacent to a $55°$ angle, hypotenuse 20 cm. (2)

$20 \cos 55° = \mathbf{11{,}47\ cm}$ ✓✓ (2)

3 Find x: opposite a $30°$ angle, adjacent 12 cm. (2)

$12 \tan 30° = \mathbf{6{,}93\ cm}$ ✓✓ (2)

4 Find θ: opposite 7, adjacent 10. (2)

$\tan^{-1}(0{,}7) = \mathbf{35{,}0°}$ ✓✓ (2)

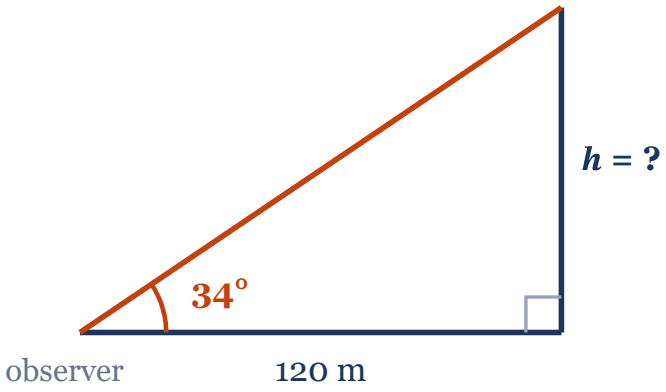
5 Find θ: opposite 5, hypotenuse 13. (2)

$\sin^{-1}\left(\frac{5}{13}\right) = \mathbf{22{,}6°}$ ✓✓ (2)

6 Find θ: adjacent 8, hypotenuse 17. (2)

$\cos^{-1}\left(\frac{8}{17}\right) = \mathbf{61{,}9°}$ ✓✓ (2)

7 From 120 m away the elevation to a tower top is 34°. Find its height. (3)



120 tan 34° = **80,94 m** ✓✓✓ (3)

8 What is the difference between an angle of elevation and one of depression? (2)

Elevation is measured **up** from the horizontal; depression is measured **down**. ✓✓ (2)

TOTAL: 17 marks

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