

Homework Section 2.3/2.4 - Due 15th Feb

Where appropriate, state your approximation.

As a general guide, your answers should be as accurate as the numbers in the given question. For example, if the question uses 3 decimal places, your answers should have at least 3 decimal places.

1. Suppose that α is the reference angle of an angle θ , what can you say about the reference angle of α ?
2. #24 on page 68.
3. #26 on page 68. Explain how the answer is compatible with the CAST diagram and the range of $\cos(\theta)$. Remark: These two criteria are a good way to check your answers quickly.
4. (a) Draw any two distinct points P and Q on the plane.
(b) Sketch a horizontal line through the point P .
(c) Sketch a ray through P and Q with the endpoint at P .
(d) Label the acute angle formed by the line and ray θ .
If the point P is above (below) Q , that is, if the y coordinate of P is greater (less) than the y coordinate of Q , then θ is called an angle of depression (elevation). (See bottom of page 76)
5. #16 on page 79.
 - (a) Is the angle A an angle of elevation, depression or neither? Explain.
 - (b) Is the angle B an angle of elevation, depression or neither? Explain.
6. #32 on page 80. (Ignore the instruction for minutes/seconds and just give your answers in degrees.)
7. #42 on page 80.
8. #52 on page 82.
9. We mentioned in lecture that we could completely solve a right angle triangle, i.e. we can compute all angles and all lengths, if we are given the lengths of any two sides.
 - (a) Explain how you could completely solve a right angle triangle if you are given one angle ($\neq 90^\circ$) and a length of any one side.
 - (b) If you are only given one angle ($\neq 90^\circ$), can you find the length of any side?
10. Suppose ABC is an isosceles triangle.
 - (a) If $A = 100^\circ$, write down *all* the possible values of B and C .
 - (b) If $A = 80^\circ$, write down *all* the possible values of B and C .
 - (c) If $c = 10\text{cm}$ is the base and $C = 120^\circ$, what is the *exact height* of the triangle?