

apart on a horizontal plane, the elevations of the tower are $20^\circ 30'$, $21^\circ 20'$; find its height. Given

$$L \sin 29^\circ 30' = 9.6923388; L \sin 8^\circ 10' = 9.1524507, \text{ Log } 8.3231 = 9.202851.$$

$$L \sin 21^\circ 20' = 9.5608546, \text{ Log } 66 = 1.8195439, \text{ Log } 8.3232 = .9202903.$$

$$\text{Ans. } 83.2313 \text{ ft.}$$

9. ABC is a triangle, prove

$$(1) \tan A + \tan B = \sin C \sec A \sec B.$$

$$(2) \frac{a-b+c}{a+b+c} = \frac{\sin A - \sin B + \sin C}{\sin A + \sin B + \sin C}.$$

$$(3) b^2 \cos^2 C - c^2 \cos^2 B = b^2 - c^2.$$

$$9. (3) b^2 \cos^2 C - c^2 \cos^2 B = b^2 - c^2$$

$$= \frac{(a^2 + b^2 - c^2)^2}{4a^2} - \frac{(a^2 + c^2 - b^2)^2}{4a^2} = \frac{(a^2 + b^2 - c^2 + a^2 + c^2 - b^2)(a^2 + b^2 - c^2 - a^2 - c^2 + b^2)}{4a^2}$$

$$= \frac{2a^2 \times 2(b^2 - c^2)}{4a^2} = b^2 - c^2.$$

MODERN LANGUAGES.

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EXERCISES IN ENGLISH.

1. Change the voice of the verbs in the following:—

(a) No one will believe the story he tells.

(b) Among them the following may be named.

(c) He evidently wrote the letter before the result was known.

(d) The children were taken charge of by a neighbour.

(e) It would probably never have been thought of.

2. Substitute words or phrases of equivalent meaning for those italicized:—

(a) The garrison was *compelled to capitulate*.

(b) The revenue was *inadequate to the needs of the province*, and trade was much *impeded*.

(c) The governor *screened delinquents* from the *consequences* of their misdeeds, sided with the *dominant* party, and made *unauthorized disbursements* from the treasury.

(d) In this district there was also an *abortive* rising which was speedily *repressed*.

(e) He endeavoured to allay political *commotion* and soften the *asperities* of party strife, and with *laudable* motives stretched his authority on the side of *clemency* to the rebels.

3. Change to indirect narrative:—

"Take you a Frenchman a piece," said he to his captains, "and leave me the Spaniards; when I haul down my colours I expect you to do the same, and not till then."

4. Change to direct narrative:—

He went on to say that if he did not hear from her before the end of that week he would take for granted that she had changed her mind, and would consider himself free to make other arrangements.

5. Combine into not more than four sentences:—

Two men were walking together. A bear suddenly met them. One climbed quickly into a tree. He hid in the branches. The other was unable to escape. He saw this. He fell flat on the ground. The bear came up. It smelled him all over. He held his breath. He pretended to be dead. The bear soon left him. Bears will not touch a dead body. So people say.

6. Expand the following sentence into as many simple sentences as there are verbs in it:—

Shortly after finishing the business on which he had come he received an invitation to dinner, and, accepting it, found himself in company with many distinguished guests, among whom he preserved a modest demeanour, taking but little part in the conversation.

7. Distinguish the following:—

(a) He has been (was) secretary of it for several years.

(b) Are (aren't) you glad to see them again?

(c) You will (shall) suffer for this.

Which is the better form:—

(a) No admission (admittance) except on business.

(b) I will go providing (provided) you come with me.