**3.1 Right Triangle Geometry**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | |  | | --- | |  | | inside edges |  | hypotenuse  legs |  |  |  |
| #1)Find a corner of a building that should be square. Mark off the lengths of the legs with the dimensions given and then measure the hypotenuse (column 3 in TABLE 1). Give your answer measurement to the nearest 1/8in. | | | |  |  |  |  |  |  |
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|  | TABLE 1 | | | | | | | |  |
|  | leg (a) | | leg (b) | | hypotenuse (c) (measured) | | hypotenuse (c) (calculated, can be done at home) | |  |
|  | 2ft-6in | | 3ft-6in | | \_\_\_\_\_ft-\_\_\_\_\_in | | \_\_\_\_\_ft-\_\_\_\_\_in | |  |
|  | 3ft | | 4ft | | \_\_\_\_\_ft-\_\_\_\_\_in | | \_\_\_\_\_ft-\_\_\_\_\_in | |  |
|  | 80 in | | 63 in | | \_\_\_\_\_in | | \_\_\_\_\_in | |  |
|  | 5 ft | | 6 ft | | \_\_\_\_\_ft-\_\_\_\_\_in | | \_\_\_\_\_ft-\_\_\_\_\_in | |  |
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| **Pythagorean Theorem** | | 𝑎2+𝑏2=𝑐2   |  | | --- | |  | |  | Works for every right triangle. | | |  |  |  |
|  |  |  |  |  |  |  | c  a  b |  |  |
| #2) Use what we learned in Chapter 2 to: | | | | |  |  |  |  |  |
|  | solve for a | | solve for b | | solve for c | |  |  |  |
|  |  | |  | |  | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| #3) Use the theorem to "calculate" the hypotense. Fill in column 4 in TABLE 1 to the nearest 1/8in. | | | | | | | | |  |
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| #4) Measure the missing lengths and fill in TABLE 2A to the nearest 1/8in. | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | TABLE 2A - MEASURED | | | | | |  |  |  |
|  | leg (a) | | leg (b) | | hypotenuse | |  |  |  |
|  | 4ft | | \_\_\_\_\_ft-\_\_\_\_\_in | | 72 in | |  |  |  |
|  | \_\_\_\_\_ft-\_\_\_\_\_in | | 3ft-2in | | 5 ft 8 in | |  |  |  |
|  | 90in | | \_\_\_\_\_in | | 122 in | |  |  |  |
|  | \_\_\_\_\_in | | 45in | | 4 ft 9 in | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| #5) Calculate the missing lengths and fill in TABLE 2A to the nearest 1/8in. | | | | | | |  |  |  |
|  | TABLE 2A – CALCULATED | | | | | |  |  |  |
|  | leg (a) | | leg (b) | | hypotenuse | |  |  |  |
|  | 4ft | | \_\_\_\_\_ft-\_\_\_\_\_in | | 72 in | |  |  |  |
|  | \_\_\_\_\_ft-\_\_\_\_\_in | | 3ft-2in | | 5 ft 8 in | |  |  |  |
|  | 90in | | \_\_\_\_\_in | | 122 in | |  |  |  |
|  | \_\_\_\_\_in | | 45in | | 4 ft 9 in | |  |  |  |
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