

NAME: \_\_\_\_\_

1. 060009a, P.I. G.G.48

The set of integers  $\{3,4,5\}$  is a Pythagorean triple. Another such set is

- [A]  $\{6,7,8\}$  [B]  $\{6,12,13\}$   
[C]  $\{6,8,12\}$  [D]  $\{8,15,17\}$

2. 010827a, P.I. G.G.48

Which set of numbers could be the lengths of the sides of a right triangle?

- [A]  $\{12,16,30\}$  [B]  $\{10,24,26\}$   
[C]  $\{3,4,6\}$  [D]  $\{4,7,8\}$

3. 010615a, P.I. G.G.39

A builder is building a rectangular deck with dimensions of 16 feet by 30 feet. To ensure that the sides form  $90^\circ$  angles, what should each diagonal measure?

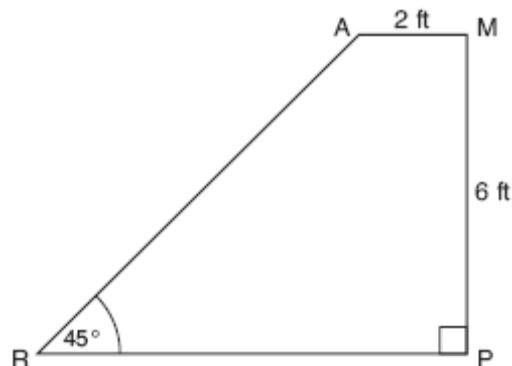
- [A] 46 ft [B] 30 ft [C] 16 ft [D] 34 ft

4. 010736a, P.I. G.G.39

The perimeter of a square is 56. Express the length of a diagonal of the square in simplest radical form.

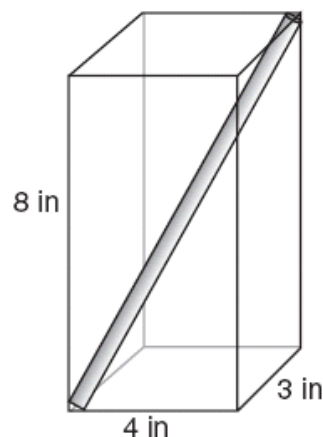
5. 080726b, P.I. G.G.40

The accompanying diagram shows ramp  $\overline{RA}$  leading to level platform  $\overline{AM}$ , forming an angle of  $45^\circ$  with level ground. If platform  $\overline{AM}$  measures 2 feet and is 6 feet above the ground, explain why the exact length of ramp  $\overline{RA}$  is  $6\sqrt{2}$  feet.



6. 060334a, G.G.48

A straw is placed into a rectangular box that is 3 inches by 4 inches by 8 inches, as shown in the accompanying diagram. If the straw fits exactly into the box diagonally from the bottom left front corner to the top right back corner, how long is the straw, to the nearest tenth of an inch?



[1] D \_\_\_\_\_

[2] B \_\_\_\_\_

[3] D \_\_\_\_\_

[3]  $14\sqrt{2}$ , and appropriate work is shown, such as using the Pythagorean theorem or drawing a correctly labeled diagram that shows the isosceles right triangle.

[2] Appropriate work is shown, but one computational error is made.

or [2] Appropriate work is shown, but the answer is expressed as a decimal or the radical is not simplified.

[1] Appropriate work is shown, but two or more computational errors are made.

or [1] Appropriate work is shown, but one computational error is made, and the answer is not expressed as a radical in simplest form.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1] 14, the side of the square is found correctly, but no further correct work is shown.

or [1]  $14\sqrt{2}$ , but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[4] incorrect procedure.

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[2] An appropriate explanation is written, such as defining special isosceles right triangles, or appropriate work is shown, such as using legs of six and finding the hypotenuse.

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but one conceptual error is made.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[5] incorrect procedure.

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[4] 9.4, and appropriate work is shown, such as the use of the Pythagorean theorem.

[3] Appropriate work is shown, but one computational or rounding error is made.

[2] Appropriate work is shown, but more than one computational or rounding error is made.

or [2] Appropriate work is shown, but one conceptual error is made.

or [2] An incorrect diagonal of the base is found, but an appropriate solution is found.

or [2] Only the diagonal of the base is found correctly, but appropriate work is shown, such as  $3^2 + 4^2 = d^2$  or use of 3–4–5 right triangles.

[1] Appropriate work is shown, but one conceptual error and one computational or rounding error are made.

or [1] The Pythagorean theorem is used to find the length of the straw, but the appropriate legs are not used.

or [1] 9.4, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[6] incorrect procedure.

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