MSTAR PRACTICE WORKSHEET

Lesson 5-8: Determine Surface Area of Pyramids

Grade 6 Mathematics · Standard 6.GR.4

Name: _____ Date: _____

These are MSTAR-style questions written for this curriculum to rehearse the format. They are not official Maryland assessment items. MSTAR — Maryland's new state test, first given in spring 2027 — uses the same kinds of questions you see here: selected response, select-all, two-part evidence questions, and written responses.

Part A — Skills Check

Warm up with the lesson's core skills — one best answer each.

Question 1 SELECTED RESPONSE · 1 POINT

A square pyramid has a base edge of 5 in and a slant height of 7 in. What is the surface area?

(A) 70 in²

(B) 95 in²

(C) 95 in³

(D) 120 in²

Question 2 SELECTED RESPONSE · 1 POINT

How many lateral (triangular) faces does a square pyramid have?

(A) 3

(B) 4

(C) 5

(D) 6

Question 3 SELECTED RESPONSE · 1 POINT

What is the area of one triangular face with base 8 in and slant height 6 in?

(A) 14 in²

(B) 24 in²

(C) 24 in³

(D) 48 in²

Question 4 SELECTED RESPONSE · 1 POINT

A square pyramid has a base area of 49 cm² and a total lateral area of 84 cm². What is the surface area?

(A) 49 cm²

(B) 84 cm²

(C) 133 cm²

(D) 133 cm³

Question 5 SELECTED RESPONSE · 1 POINT

Your first gift box is a square pyramid with a base edge of 7 in and a slant height of 9 in. How much wrapping paper (total surface area) covers it?

(A) 126 in²

(B) 144 in²

(C) 175 in²

(D) 175 in³

Question 6 SELECTED RESPONSE · 1 POINT

Before adding the base, you need the area of just one triangular face of a gift box with base edge 8 in and slant height 5 in. What is it?

(A) 13 in²

(B) 20 in²

(C) 20 in³

(D) 40 in²

Part B — Test-Format Questions

These match the state test's formats: two-part questions, select-all, and written responses.

Question 7 TWO-PART QUESTION

Part A

A square pyramid has a base measuring 6 m by 6 m and four triangular faces, each with a base of 6 m and a slant height of 5 m. What is its surface area?

Fill in the bubble next to the one best answer.

(A) 36 square meters

(B) 60 square meters

(C) 96 square meters

(D) 156 square meters

Part B

Answer Part A before Part B — Part B asks about your reasoning.

Why does a pyramid's surface area use the slant height rather than the vertical height?

(A) The slant height is the height of each triangular face, measured along the face itself.

(B) The vertical height is always longer than the slant height.

(C) The slant height is easier to measure.

(D) Pyramids do not have a vertical height.

Question 8 SELECT ALL THAT APPLY

Select ALL statements that are true about the surface area of a pyramid:

Mark the box next to EVERY answer that is true. More than one is correct.

[A] Surface area = base area + the areas of all lateral faces.

[B] A square pyramid has 4 triangular lateral faces.

[C] Each lateral face area is ½ × base of the triangle × slant height.

[D] The vertical height is used to find each triangular face area.

[E] A pyramid's net shows the base and every lateral face laid flat.

Part C — Show Your Thinking

Answer in writing, the way the state test's constructed responses work.

Question 9 WRITTEN RESPONSE · 2 POINTS

Two pyramids have the same base area (64 in²) but different slant heights. Pyramid A has slant height 6 in and Pyramid B has slant height 10 in. How much more surface area does Pyramid B have? Why does slant height affect surface area but NOT base area?

Write your answer in complete sentences. Show or explain your mathematical thinking.

When you finish, check your reasoning with your teacher or family. Your teacher has the scoring guide for the written responses.