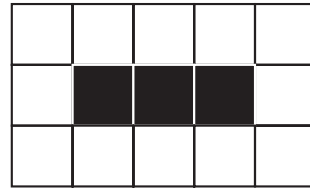
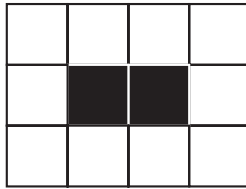
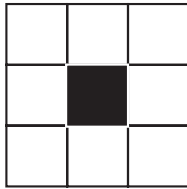


Session 1, Open-Response Question



- 9 A worker placed white tiles around black tiles in the pattern shown in the three figures below.



- Based on this pattern, how many white tiles would be needed for 4 black tiles?
- Based on this pattern, how many white tiles would be needed for 50 black tiles?
- Make a scatterplot of the first five figures in this pattern showing the relationship between the number of white tiles and the number of black tiles. Be sure to label the axes.
- Based on this pattern, explain how you could find the number of white tiles needed for any number,  $n$ , of black tiles. Show or explain your work.

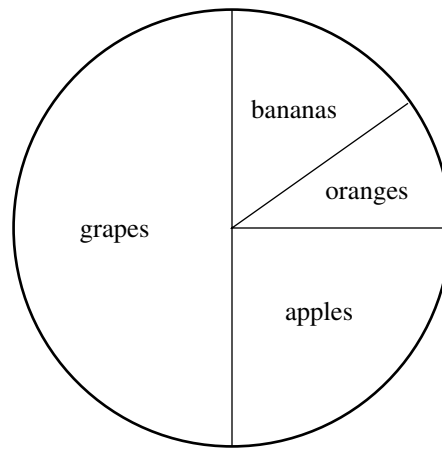
Reporting Category for Item 9: *Patterns, Relations, and Algebra*

Session 1, Multiple-Choice Questions



- 10 Marty surveyed 24 students and asked them to name their favorite fruit. The circle graph below shows the results of his survey.

Students' Favorite Fruits



Which fruit was the favorite of **exactly** 6 of the students?

- A. apples
- B. oranges
- C. bananas
- D. grapes

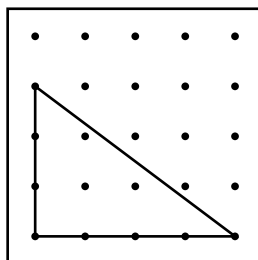
Reporting Category for Item 10: *Data Analysis, Statistics, and Probability*

## Mathematics, Grade 8

- 11 Huey is reading a book that is 697 pages long. He tells a friend that he is about  $\frac{3}{4}$  of the way done. About how many more pages must Huey read before he finishes the book?
- A. 150 pages
  - B. 160 pages
  - C. 175 pages
  - D. 250 pages

Reporting Category for Item 11: *Number Sense and Operations*

- 12 On the grid below, the distance between each dot is 1 inch.



- What is the length, in inches, of the hypotenuse of the right triangle?
- A. 4
  - B. 4.5
  - C. 5
  - D. 5.5

Reporting Category for Item 12: *Geometry*