

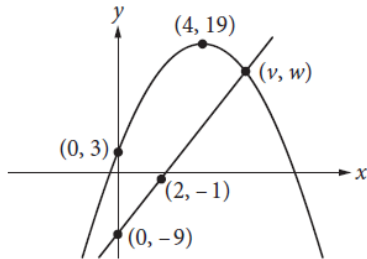
# Some PSAT Practice ... Calculator is OK

# 4



# 4

28



The  $xy$ -plane above shows one of the two points of intersection of the graphs of a linear function and a quadratic function. The shown point of intersection has coordinates  $(v, w)$ . If the vertex of the graph of the quadratic function is at  $(4, 19)$ , what is the value of  $v$ ?

29

In a college archaeology class, 78 students are going to a dig site to find and study artifacts. The dig site has been divided into 24 sections, and each section will be studied by a group of either 2 or 4 students. How many of the sections will be studied by a group of 2 students?

4



4

Questions 30 and 31 refer to the following information.

$$v = v_0 - gt \quad (\text{speed-time})$$

$$h = v_0 t - \frac{1}{2}gt^2 \quad (\text{position-time})$$

$$v^2 = v_0^2 - 2gh \quad (\text{position-speed})$$

An arrow is launched upward with an initial speed of 100 meters per second (m/s). The equations above describe the constant-acceleration motion of the arrow, where  $v_0$  is the initial speed of the arrow,  $v$  is the speed of the arrow as it is moving up in the air,  $h$  is the height of the arrow above the ground,  $t$  is the time elapsed since the arrow was projected upward, and  $g$  is the acceleration due to gravity ( $9.8 \text{ m/s}^2$ ).

30

What is the maximum height from the ground the arrow will rise to the nearest meter?

31

How long will it take for the arrow to reach its maximum height to the nearest tenth of a second?

**STOP**

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section.

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### Answers

Correct Answers Black letter after answer indicates difficulty level  
(e = easy, m = medium, h = hard).

28.	6	m	31. 10.2 or $\frac{51}{5}$ h
29.	9	h	
30.	510	h	