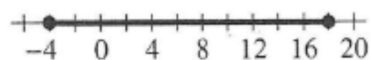**14.** The coordinates of the endpoints of a certain segment on the real number line below are −4 and 18. What is the coordinate of the midpoint of this segment?

−4 0 4 8 12 16 20

A. 7
B. 8
C. 9
D. 11
E. 14

16. After school, Ms. Lopez gives piano lessons to 10 students and flute lessons to 14 students. Ms. Lopez gives both piano lessons and flute lessons to 8 of these students. To how many students does she give lessons after school?

A. 4
B. 12
C. 16
D. 24
E. 32

Use the following information to answer questions 20–23.

Aiden and Mandy are making 3 different types of cookies for a bake sale. The 3 recipes each require different amounts of butter and flour. The table below shows the amount of butter, flour, and the number of cookies per batch for each type of cookie. The cookies will be baked on rectangular cookie sheets that are 14 inches by 17 inches.

Type of cookie	Butter (cups)	Flour (cups)	Number of cookies per batch
Chocolate chip	$\frac{1}{2}$	$2\frac{1}{2}$	60
Oatmeal	$\frac{3}{4}$	$1\frac{3}{4}$	48
Sugar	$\frac{1}{3}$	2	48

20. How many cups of butter are needed to make 2 batches of each of the 3 types of cookies?

A. $\frac{19}{24}$

B. $1\frac{1}{9}$

C. $1\frac{7}{12}$

D. $3\frac{1}{6}$

E. $7\frac{7}{12}$

Type of cookie	Butter (cups)
Chocolate chip	$\frac{1}{2}$
Oatmeal	$\frac{3}{4}$
Sugar	$\frac{1}{3}$

21. Aiden wants to be sure there will be enough cookies for the bake sale. With c batches of chocolate chip cookies, o batches of oatmeal cookies, and s batches of sugar cookies, how many cookies will there be?

A. $48c + 48o + 48s$
B. $48c + 48o + 60s$
C. $48c + 60o + 48s$
D. $60c + 48o + 48s$
E. $60c + 60o + 60s$

Type of cookie	Number of cookies per batch
Chocolate chip	60
Oatmeal	48
Sugar	48

22. Mandy has 3 cups of butter to make chocolate chip cookies. She has enough flour and other ingredients needed to make the cookies. How many batches of chocolate chip cookies can Mandy make?

A. 2
B. 3
C. 4
D. 6
E. 9

Type of cookie	Butter (cups)
Chocolate chip	$\frac{1}{2}$
Oatmeal	$\frac{3}{4}$
Sugar	$\frac{1}{3}$

23. All 3 recipes give the following directions for baking the cookies: roll the dough into balls with a diameter of 1 inch, and place the dough balls on a cookie sheet so that any 1 dough ball is at least 2 inches from all sides of the sheet and at least 2 inches from any other dough ball. Following these directions, Mandy will place the dough balls on the cookie sheet in a rectangular pattern so that each row has the same number of dough balls and each column has the same number of dough balls. What is the maximum number of dough balls Mandy can place on 1 cookie sheet?

A. 14
B. 15
C. 16
D. 17
E. 20

batch for each type of cookie. The cookies will be baked on rectangular cookie sheets that are 14 inches by 17 inches.