11   The function $p(t) = 3(2)^t$ represents the population of a certain type of bacteria after t days.

What is the population of the bacteria after 5 days?

Write your answer in the space provided.

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12   Solve the inequality.

$$4x - 7 \geq \frac{-12x + 14}{4}$$

A. $x \geq \dfrac{7}{2}$

B. $x \leq \dfrac{7}{2}$

C. $x \geq \dfrac{3}{2}$

D. $x \leq \dfrac{3}{2}$

13 One end of a metal spring is attached to a ceiling. The other end of the spring hangs down.

The table displays the length of the spring when different masses are tied to the end of the spring that hangs down.

Mass Tied to Spring (kg)	Length of Spring (cm)
0	439.0
2	439.1
4	439.2
6	439.3

How much longer does the spring become with each extra kilogram of mass that is tied to it?

M. 0.01 cm

P. 0.05 cm

R. 0.1 cm

S. 0.5 cm

14 Jackie buys 3 hot dogs and 1 pretzel from a restaurant for $12.25. Sylvia buys 2 hot dogs and 4 pretzels from the same restaurant for $16.50.

Part A

Which system of equations can be used to determine the price of a hot dog, *h*, and a pretzel, *p*, at the restaurant?

A. $2h + 1p = 12.25$
$3h + 4p = 16.50$

B. $3h + 2h = 12.25$
$1p + 4p = 16.50$

C. $2h + 4p = 12.25$
$3h + 1p = 16.50$

D. $3h + 1p = 12.25$
$2h + 4p = 16.50$

Part B

What is the price of a hot dog at the restaurant?

Enter your answer in the space provided.

15 Jesse sent an email to 4 people for a school project. In her email, she requested that each person copy and send the same email to 4 additional people.

If everyone continues to send the email as requested, which equation could be used to determine the number of emails, y, that will be sent for a given round, x?

M. $y = x^4$

P. $y = 4^x$

R. $y = 4x$

S. $y = \dfrac{4}{x}$

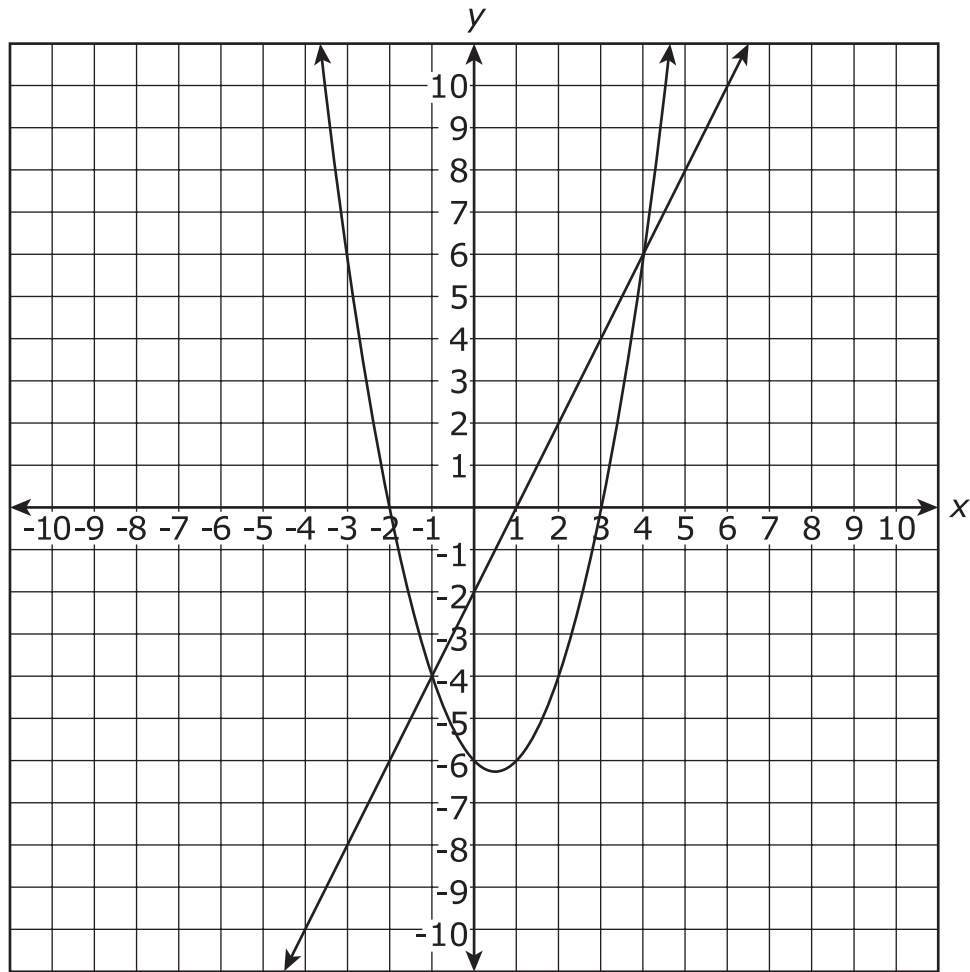**16** The height, in inches, of each student in Megan's algebra class is shown.

54	58	59	62	62
62	63	64	65	65
65	66	67	69	70
70	70	71	72	72

Select the **three** measures that will be affected if a student who is 77 inches tall joins the class.

A. interquartile range

B. mean

C. median

D. range

E. standard deviation

Go on ⇨

17   The graph of two functions is shown on the coordinate plane.

Select **all** values of x for which $f(x) = g(x)$.

M. -2

P. -1

R. 0

S. 1

T. 3

V. 4

18   John has a goal to ride his bike at least 100 miles this summer. John has ridden 12 miles thus far. There are 40 days left in the summer.

Part A

Write an inequality to represent the average distance, d, in miles, John must ride each day for the rest of the summer to achieve his goal.

Enter your inequality in the space provided.

Part B

Determine the average number of miles John must ride each day to reach **exactly** 100 miles.
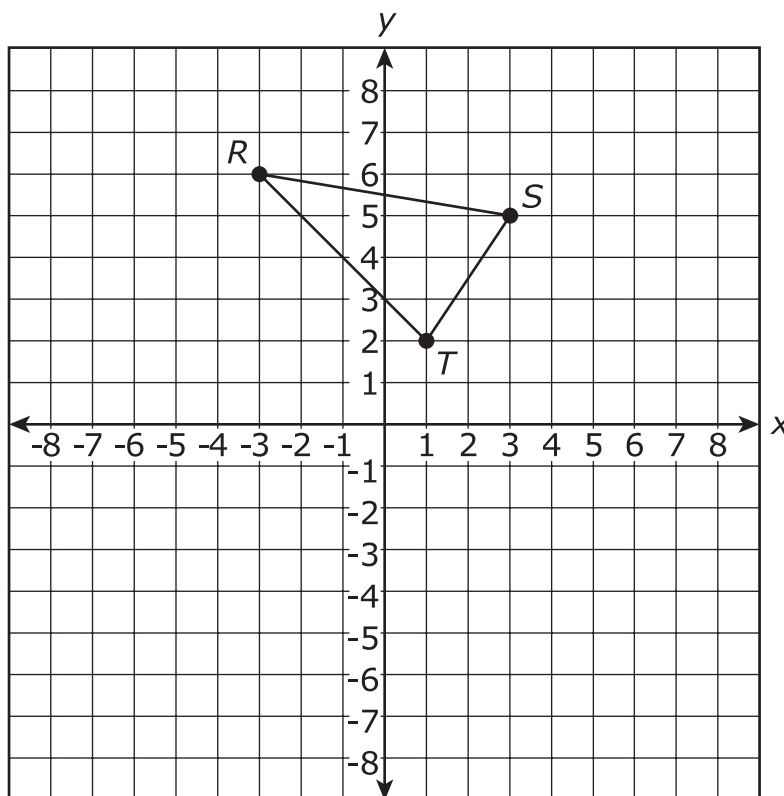
Enter your answer in the space provided.

19   Jamie deposits $627 into a savings account. The account has an interest rate of 3.5%, compounded quarterly.

Write the function that gives the amount of money in dollars, $J(t)$, in Jamie's account t years after the initial deposit.

Write your answer in the space provided.
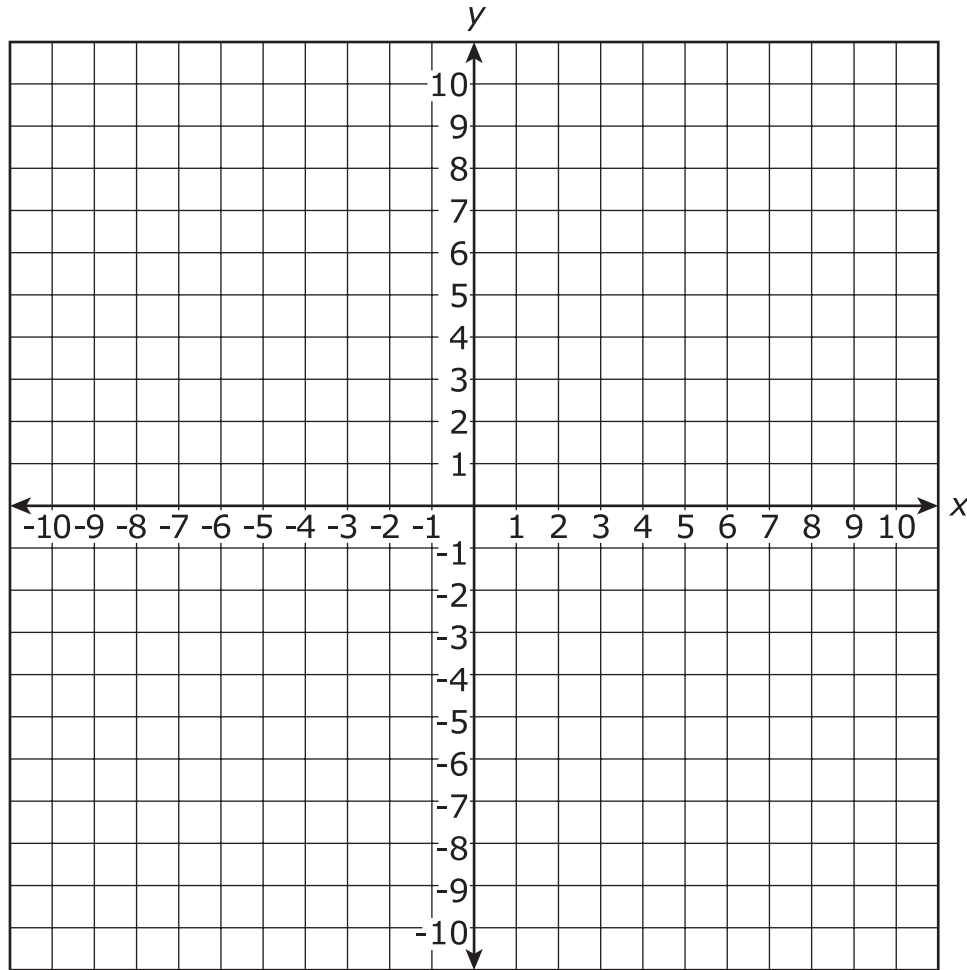
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20   △RST is shown on a coordinate plane.

20   **continued**

Create the final image of △*RST* after reflecting first over the *x*-axis and then over the *y*-axis on the coordinate plane provided.

STOP

This is the end of Subpart 2 of the Integrated Math I Test.
Do not go on to the next page until told to do so.