

1. Which expression is equivalent to $4(6x + 11)$?

Use Distributive Property

$$(4 \cdot 6x) + (4 \cdot 11)$$

$$24x + 44$$

- (A) 68
- (B) $68x$
- (C) $24x + 11$
- (D) $24x + 44$

2. Fill in the bubbles to select the value or values of x that make each equation or inequality true.

	$x = 1$	$x = 2$	$x = 3$
$2x + 5 = 9$	<input type="radio"/> (A)	<input checked="" type="radio"/> (B)	<input type="radio"/> (C)
$2x + 5 < 9$	<input checked="" type="radio"/> (D)	<input type="radio"/> (E)	<input type="radio"/> (F)
$4x - 5 < 7$	<input checked="" type="radio"/> (G)	<input checked="" type="radio"/> (H)	<input type="radio"/> (I)

$x < 2$

$4x - 5 < 7$
 $+5 +5 \rightarrow 4x < 12$
 $x < 3$

$2x + 5 = 9$
 $-5 -5$

$2x = 4$
 $\frac{2x}{2} = \frac{4}{2}$

$x = 2$

$2(2) + 5 = 9$
 $4 + 5 = 9 \checkmark$

3. Chicago has a temperature of -10 degrees Fahrenheit ($^{\circ}\text{F}$). It is colder in Minneapolis than in Chicago.

Select all the values that could represent the temperature of Minneapolis.

- (A) 12°F
- (B) 8°F
- (C) -8°F
- (D) -12°F
- (E) -20°F

Chicago -10
 COLDER than -10°

4. Dominic is buying candy by the pound for a party. For every 10 pounds of candy he buys, he pays \$12.

What is the cost, per pound, for the candy?

\$

1	.	2	0				
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

$10 \overline{) 12.0}$
 $-10 \downarrow$
 $\hline 20$

"per pound" means
 "how much for one?"

$\frac{\$12}{10} = \frac{\$ \boxed{?}}{1 \text{ pound}}$

5. Which question can be answered using the expression $\frac{1}{3} \div \frac{3}{4}$?

How many of this can fit into

- (A) Dan fills $\frac{1}{3}$ of a mold that holds $\frac{3}{4}$ pound of sand. How much sand did Dan use to fill the mold?
- (B) Dan fills $\frac{3}{4}$ of a mold that holds $\frac{1}{3}$ pound of sand. How much sand did Dan use to fill the mold?
- (C) How many $\frac{3}{4}$ -pound molds are in $\frac{1}{3}$ pound of sand?
- (D) How many $\frac{1}{3}$ -pound molds are in $\frac{3}{4}$ pound of sand?

6. An expression is shown.

$$1608 \div 268$$

What is the value of the expression?

										6
-	-	-	-	-	-	-	-	-	-	-
7	7	7	7	7	7	7	7	7	7	7
-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9

$$\begin{array}{r} 4 \\ 268 \\ \times 6 \\ \hline 1608 \end{array}$$

$$\begin{array}{r} 3 \\ 268 \overline{) 1608} \\ \underline{-1340} \\ 268 \end{array}$$

7. Nora's fruit stand sold 12 fewer pineapples than bananas last week. The stand sold 48 bananas last week.

$$48 - 12 = 36 \text{ pineapples}$$

Complete the sentences to determine and interpret the ratio of bananas sold to pineapples sold. For each box, fill in the bubble before the ratio or number(s) that is correct.

$$48 : 36$$

Last week, the ratio of bananas sold to pineapples sold was

- (A) 1:4
- (B) 3:4
- (C) 4:1
- (D) 4:3
- (E) 4:5

$$48 : 36$$

$$4 : 3$$

This ratio means that for every 4 banana(s) sold,

- (A) 1
- (B) 3
- (C) 4
- (D) 5

the number of pineapples sold was

- (A) 1
- (B) 3
- (C) 4
- (D) 5

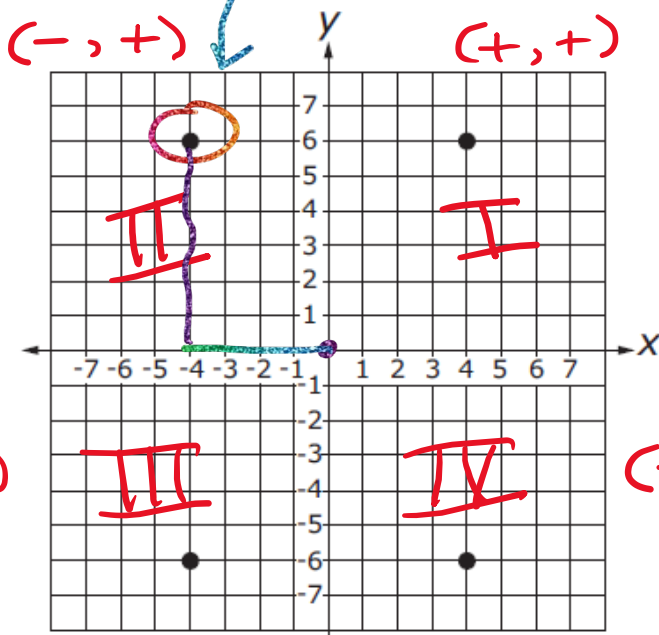
8. Amir collected data from his sixth-grade class at Liberty Middle School.

Which question could Amir ask as a statistical question?

More than one answer

- (A) What time do classes start at Liberty Middle School?
- (B) What is the typical favorite subject in sixth grade?
- (C) How many students were in sixth grade at the start of this year?
- (D) How many subjects are there in sixth grade?

9. Which ordered pair best describes the point plotted in Quadrant II on the coordinate plane shown?



- (A) (-4, 6)
 - (B) (6, 4)
 - (C) (4, -6)
 - (D) (6, -4)
- (x, y)

10. This question has two parts.

Syrilla sells homemade scarves for \$4 each.

Part A. Which equation could be used to find the number of scarves, x , Syrilla needs to sell in order to earn \$200?

- (A) $\frac{x}{4} = 200$
- (B) $4x = 200$
- (C) $x + 4 = 200$
- (D) $x - 4 = 200$

$$4x = 200$$

Part B. Complete the sentence by selecting the correct number. For the blank, fill in the bubble **before** the number that is correct.

Syrilla needs to sell 50 [50 196 204 800] scarves in order to earn \$200.

$$4 \overline{) 200} \begin{array}{r} 50 \\ \underline{200} \\ 0 \end{array}$$

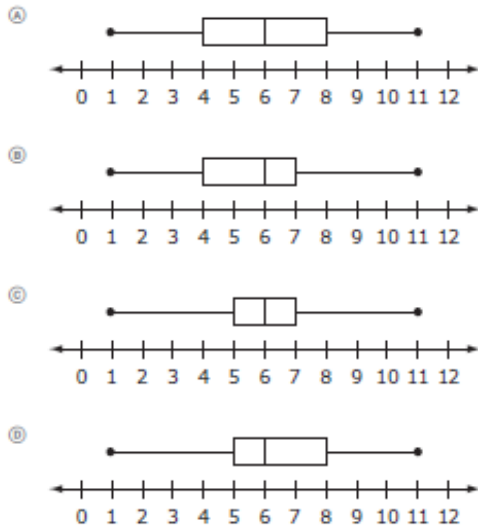
15. Fill in the bubbles to match the equivalent expressions.

	$4(10+9)$	$9(5+2)$	$3(12+7)$
$36 + 21$	(A)	(B)	(C)
$45 + 18$	(D)	(E)	(F)
$40 + 36$	(G)	(H)	(I)

16. A class survey provides the data shown.

1, 4, 4, 5, 5, 5, 6, 6, 7, 7, 7, 8, 8, 9, 11

Which box plot represents the class?



17. Select all the statements that describe the expression $5 + 2x$.

- (A) The expression represents 5 plus 2 plus x .
- (B) The expression represents 5 plus 2 times x .
- (C) The expression represents 5 plus x plus x .
- (D) The expression represents 5 plus x times x .
- (E) The expression represents the sum of 5 and $2x$.
- (F) The expression represents the product of 5 and $2x$.

18. Tina sells lampshades for \$7 each and paper lanterns for \$4 each at a one-day craft fair. She sells k lampshades and $(k + 4)$ paper lanterns. The expression $7k + 4(k + 4)$ represents Tina's total sales.

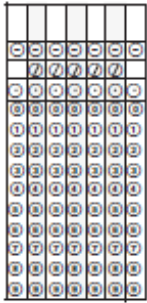
Select all the equivalent expressions for Tina's total sales at the fair.

- (A) $8k + 16$
- (B) $11k + 4$
- (C) $11k + 16$
- (D) $7k + 4k + 4$
- (E) $7k + 4k + 16$

19. An expression is shown.

$$590.92 - 219.38$$

What is the value of the expression?



20. Which of the following situations can be represented by this expression?

$$50(b + 3b)$$

- Ⓐ
- | <i>b</i> is equal to | Situation |
|---------------------------------------|--|
| number of blocks each friend received | Alexi had some blocks. She gave 50 blocks to Manuel and divided the rest evenly among her 3 friends. |
- Ⓑ
- | <i>b</i> is equal to | Situation |
|------------------------------|---|
| number of blocks in each set | Alexi had 50 blocks. Manuel gave her 1 set of blocks, and she bought 3 more sets of blocks. |
- Ⓒ
- | <i>b</i> is equal to | Situation |
|----------------------|--|
| a set of blocks | Manuel and Alexi bought some blocks. Manuel bought 50 sets of blocks. Alexi bought 4 times as many sets as Manuel. |
- Ⓓ
- | <i>b</i> is equal to | Situation |
|----------------------|---|
| a set of blocks | Manuel and Alexi bought sets of 50 blocks. Alexi bought 3 times as many sets as Manuel. |

21. In a circle, which ratio is equivalent to π ?

- Ⓐ radius to area
 Ⓑ diameter to radius
 Ⓒ area to circumference
 Ⓓ circumference to diameter

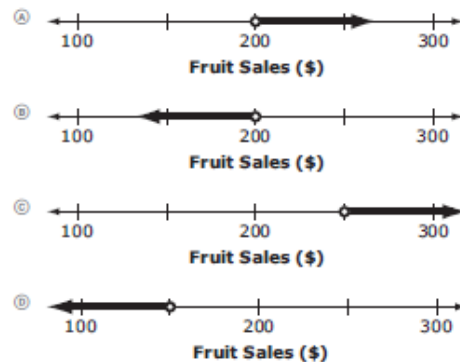
22. This question has **two** parts.

Jayesh determines that he needs to sell more than \$200 worth of fruit at his produce stand in order to make a profit.

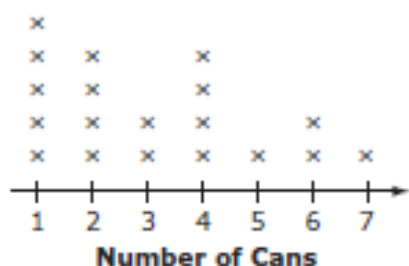
Part A. Which inequality represents the fruit sales, s , in dollars, for which Jayesh will make a profit?

- Ⓐ $s < 150$
 Ⓑ $s < 200$
 Ⓒ $s > 200$
 Ⓓ $s > 250$

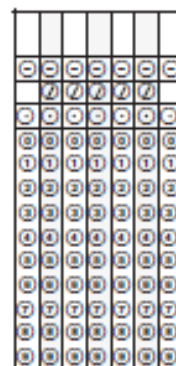
Part B. Which number line models all fruit sales, in dollars (\$), for which Jayesh will make a profit?



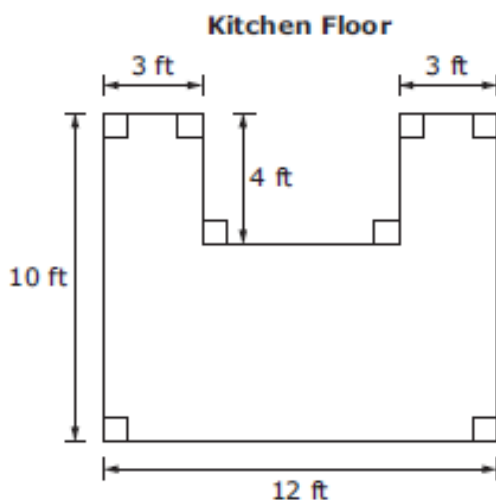
23. A line plot shows the number of cans a class of students at Epping Middle School collected for a canned food drive.



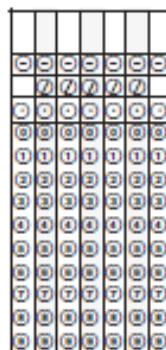
How many students collected cans of food?



24. Mr. Hilton is buying new tile for his kitchen floor. The dimensions, in feet (ft), of the kitchen floor are shown.



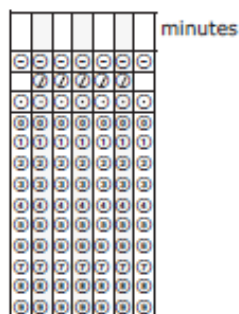
What is the area, **in square feet**, of Mr. Hilton's kitchen floor?



25. Linda recorded the number of minutes she practiced playing her violin for 10 days. The table shown represents the data she collected.

Day	Minutes Practiced
1	20
2	30
3	40
4	38
5	25
6	22
7	39
8	22
9	26
10	31

A. According to the data, what is the average amount of time Linda spent practicing per day?



B. What is Linda's variation among all 10 days?

