Name: _____ Date: _____

<table>
<tr>
<td>

1. You are writing a report on video games. You are including the fact that a specific video game has been downloaded 190,000,000 times. Write this number in scientific notation.

A. $19 \cdot 10^7$

B. $19 \cdot 10^{-7}$

C. $1.9 \cdot 10^8$

D. $1.9 \cdot 10^{-8}$

</td>
<td>

2. You need $\frac{3}{4}$ of a can of paint to paint one bench. How many cans would you need to paint 8 benches of equal size?

</td>
</tr>
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<td>

3. I listened to 120 songs out of the 243 songs I downloaded this month. About what percent is that?

A. 12%

B. 50%

C. 75%

D. 90%

</td>
<td>

4. What is $\frac{5}{8}$ written as a decimal?

</td>
</tr>
<tr>
<td>

5. What is the value of $\left(\frac{3}{7}\right)^2$?

A. $\frac{6}{14}$

B. $\frac{9}{14}$

C. $\frac{6}{49}$

D. $\frac{9}{49}$

</td>
<td>

6. A chocolate bar normally costs $3. At a sports fundraiser, the same chocolate bar is selling for $5. What is the percent markup or increase in the price of the bar?

</td>
</tr>
</table>

---

7. If you deposit $250 in your bank account, you will earn 7% simple interest per year on that amount. How much interest will you earn in 4 years?

8. $\dfrac{7^6}{7^{-2}} =$

   A. 7^8

   B. 7^4

   C. 7^{-3}

   D. 7^{-12}

---

9. Four out of a group of nine friends attended the Haunted House event. About what percent attended the event?

10. $\dfrac{4}{9} + \dfrac{2}{3} =$

   A. $\dfrac{8}{27}$

   B. $\dfrac{6}{12}$

   C. $\dfrac{10}{9}$

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

---

11. $(6^2)^{10} =$

   A. 6^{20}

   B. 6^{12}

   C. 6^5

   D. 6^8

12.   The square root of 70 is between:

   A. 6 and 7

   B. 7 and 8

   C. 8 and 9

   D. 9 and 10

---

13. If the square root of a number is between 5 and 6, then that number must be between:

   A. 3 and 9

   B. 9 and 16

   C. 16 and 25

   D. 25 and 36

14. If $|y| = 36$, what must be the value of y?

   A. Either 6 or -6

   B. Either 36 or --36

   C. Either 9 or 4

   D. Either 12 or 3

15. What is the mean of 13, 22, and 31?

16. The mean of four numbers is 6. The first three numbers are 8, 9, and 3. What is the fourth number?

17. You have 8 sour cherry, 5 cotton candy, and 12 bubble gum flavored jelly beans in a brown paper bag. All the jelly beans are the same size. First, you reach into the bag, pick one sour cherry bean and eat it. Then, you randomly remove another jelly bean without looking. What is the probability that this bean is a sour cherry one?

   A. $\frac{1}{8}$

   B. $\frac{7}{8}$

   C. $\frac{7}{25}$

   D. $\frac{7}{24}$

18. **To win a video game, you have to go through one of three gates. You then have to climb over one of four mountains. In the table below the letter G represents the gates and the letter M represents the mountains.**

	G1	G2	G3
M1	G1 M1	G2 M1	G3 M1
M2	G1 M2	G2 M2	G3 M2
M3	G1 M3	G2 M3	G3 M3
M4	G1 M4	G2 M4	G3 M4

A. How many possible choices do you have for entering a gate and climbing a mountain?

B. If you randomly choose a path, what is the probability that you will go through gate 3 and mountain 3?

---

19. **What is the probability of <u>NOT</u> landing on 3 when spinning this spinner one time?**
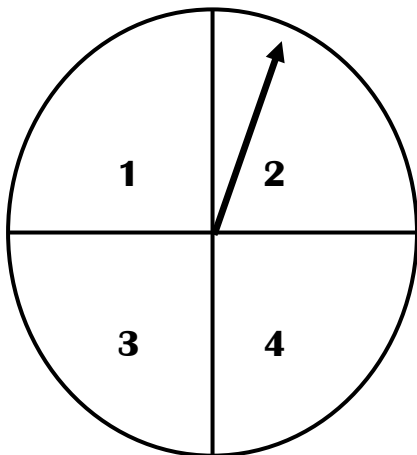
A. $\frac{1}{4}$ **or 25%**   **B.** $\frac{1}{3}$ **or** $33\frac{1}{3}$**%**

C. $\frac{3}{4}$ **or 75%**   **D.** $\frac{1}{2}$ **or 50%**

20. **What is the probability of landing on 1 when spinning the spinner below one time**

A. $\frac{1}{3}$ **B.** $\frac{1}{6}$

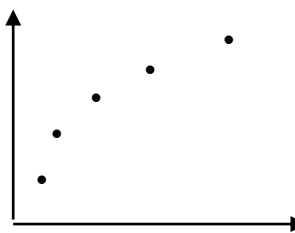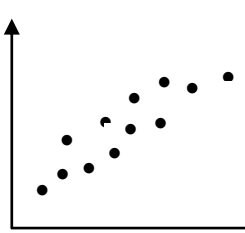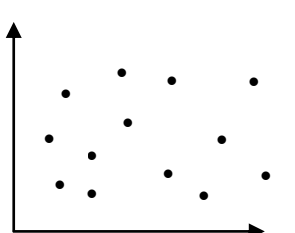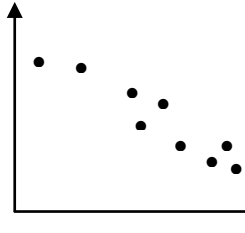**C.** $\frac{5}{6}$ **D.** $\frac{1}{2}$

Name: _____ Date: _____
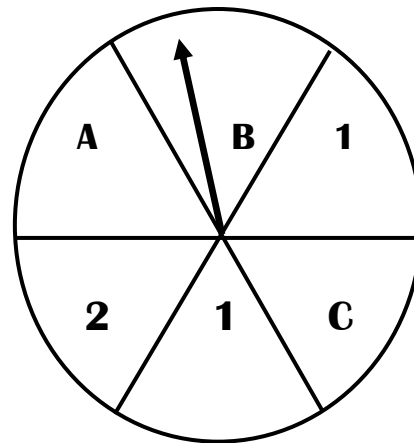
21. **Suppose that a student constructs the following graph to show how he usually spends his time after school.**

Texting & calling friends 18%

Online: Social media, Facebook...etc 23%

TV 24%

Video games 20%

HW & Reading 15%
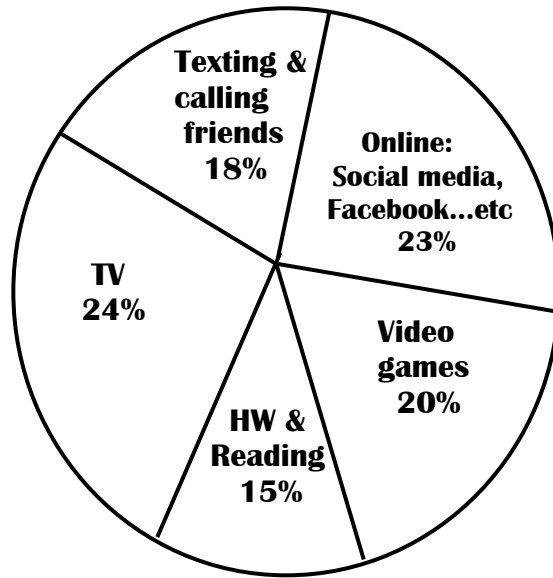
Which of the following is <u>NOT</u> a valid statement about this data?

A. The student spends one fifth of his time after school playing video games

B. The student spends more than half his time after school online and on TV

C. The student spends more than three-fourths of his time after school doing things other than reading and homework

D. The student spends $\frac{6}{25}$ of his time watching TV

---

22. **Which of the following graphs represents a negative correlation?**

A.

B.

D.

C.

23. The bar graph below represents dollar amounts generated from sales of Hot Cheetos at school for a particular week.
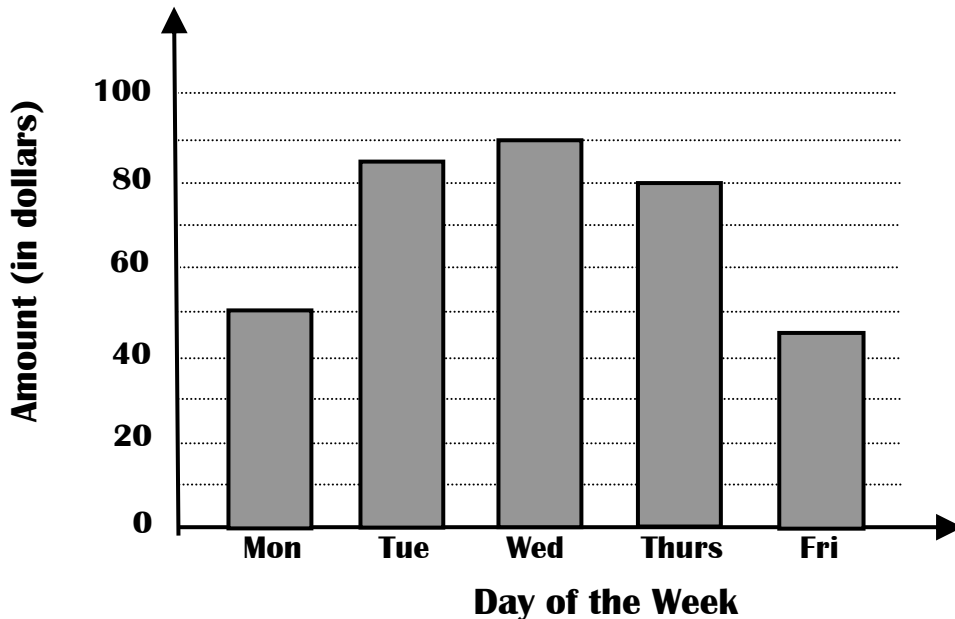
Based on the graph, which of the following statements is true?

A. Wednesday's sales of Hot Cheetos are double Monday's sales

B. The difference between Tuesday's sales and Fridays sales is the highest for the week

C. Friday's sales are 50% as much as Wednesday's sales

D. No day recorded less than $50 in sales

---

24. Which of the following inequalities represents: "5 decreased by a number, x, is greater than 45"?

A. $5 - x > 45$

B. $x - 5 > 45$

C. $5 - x < 45$

D. $x - 5 < 45$

25. Evaluate $\frac{xy-2}{3} - 3$ for $x = 10$ and $y = 2$

   A. 3

   B. 5

   C. 6

   D. 15

---

26. Evaluate $2(3x - 1)^2$ for $x = 2$

---

27. According to the graph below, after 1 hour of playing the game, player 1 is leading player 2 by how many points?
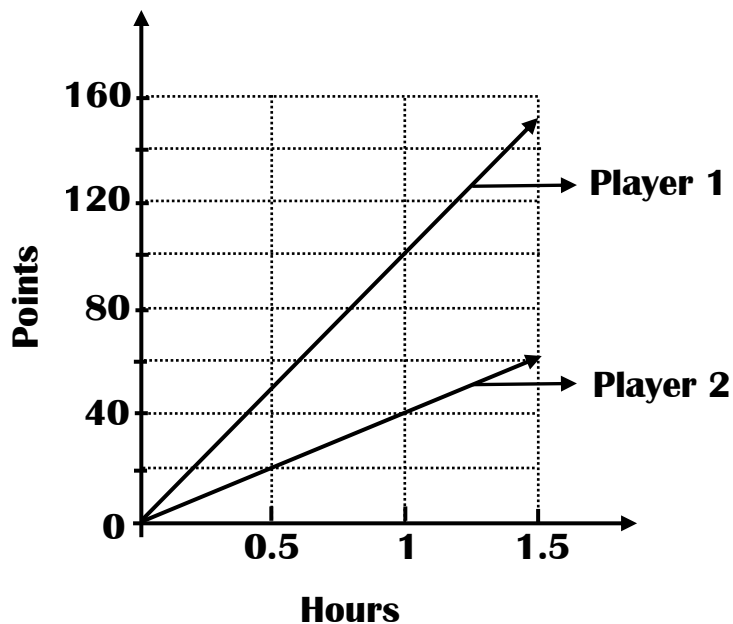
   A. 50 points

   B. 60 points

   C. 90 points

   D. 100 points

28. $x^2 y^4 =$

A. $xxyyyy$

B. $6xy$

C. $(xy)^8$

D. $2x + 4y$

29. $(5a^5 bc)(4a^3 b^2 c) =$

A. $20a^8 b^3 c^2$

B. $9a^8 b^3 c^2$

C. $20a^{15} b^2 c$

D. $9a^{15} b^2 c$

30. **Which of the following graphs represents the equation $y = x^3$?**

A.
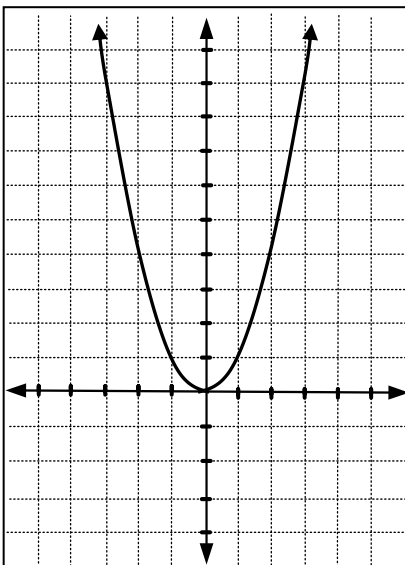
B.
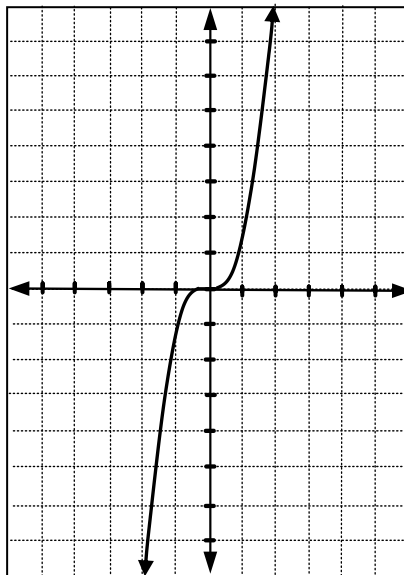
C.
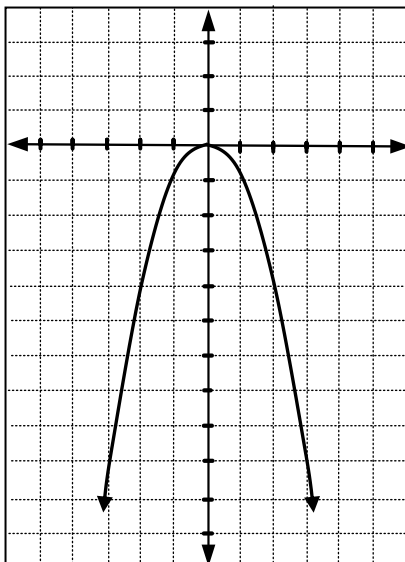
D.
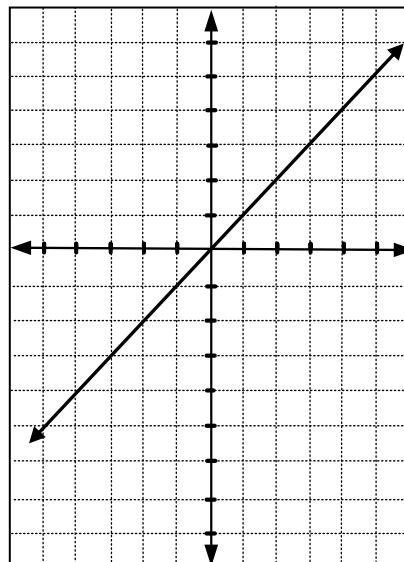
31. **What is the slope of the following graph?**
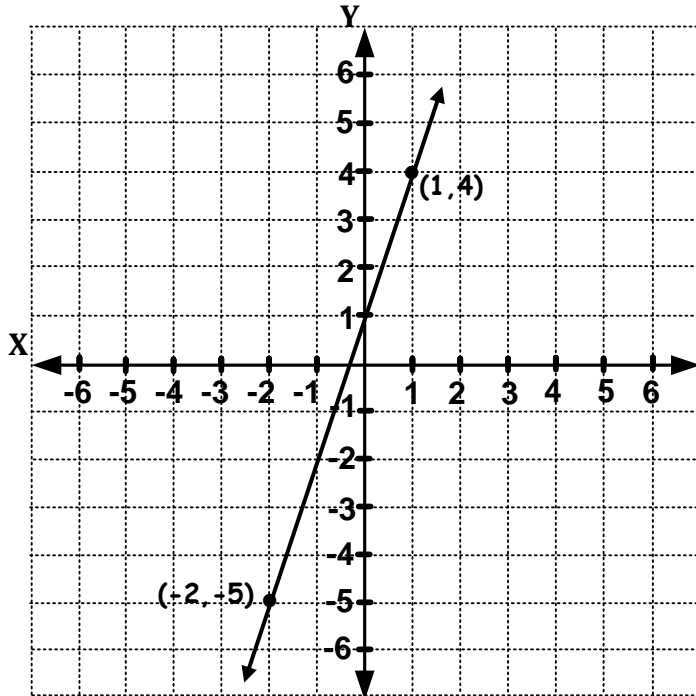
A. $-\dfrac{1}{5}$

B. $-\dfrac{1}{2}$

C. $\dfrac{1}{3}$

D. 3

---

32. x **in the inequality** $50 + 70x \le 190,$ **represents the number of hours a construction job should take to complete. What phrase below describes these hours?**

A. The number of hours should at most be 2

B. The number of hours should at least be 2

C. The number of hours should be less than 2

D. The number hours should be greater than 2

33. **The graph below shows my phone bill for calls to Germany in the last 3 months. What is the cost per minute for calling Germany?**

```
Cost in $

$12 ┤
     │
 $9  ┤                    August
     │
 $6  ┤          July
     │
 $3  ┤    June
     │
  0  ┼────┬─────┬─────┬────
       20 min  40 min  60 min
          Length of call
```

---
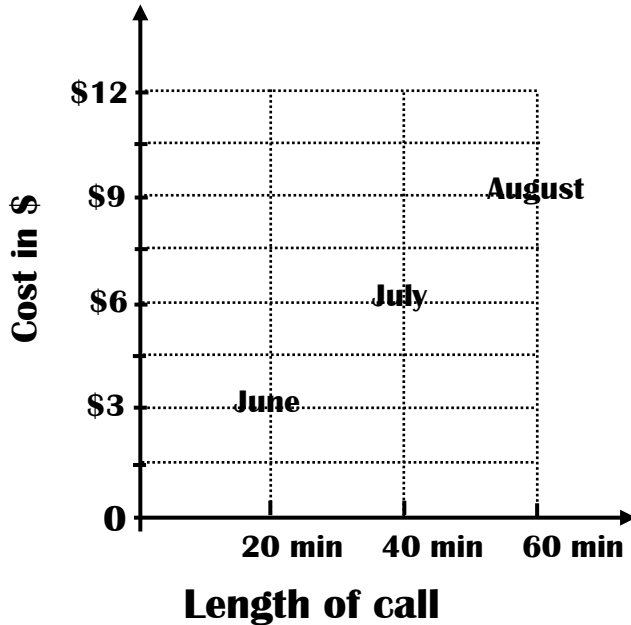
34. **I have to paint 288 bird houses. In the last 5 days, I was able to paint 120 houses. If I keep working at the same rate, how long will it take me to paint all the houses?**

---

35. **One meter equals:**

   A. 1,000 millimeters

   B. 100 millimeters

   C. $\dfrac{1}{1,000}$ **millimeters**

   D. $\dfrac{1}{100}$ **millimeters**

36. The actual length of this rectangle is 45 centimeters. Use the provided scale drawing to find the actual width of the rectangle.
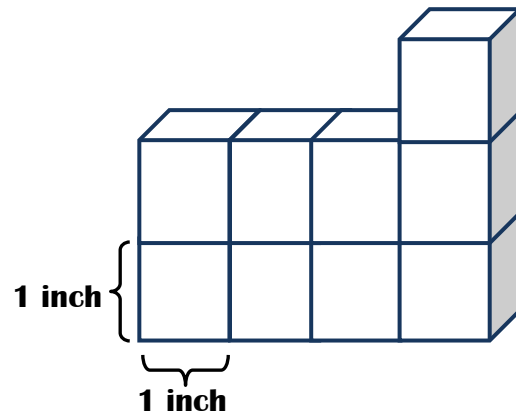
Width
3 cm

Length
5 cm
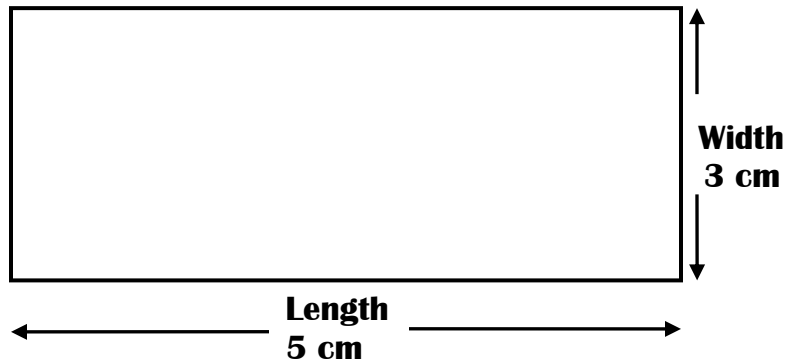
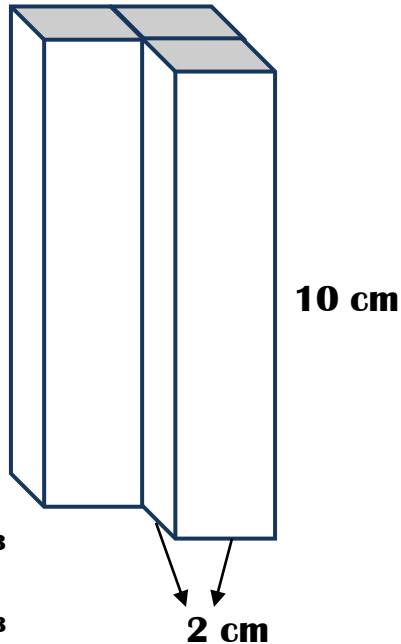**37.** What is the area of the following triangle?

7   6   10

11
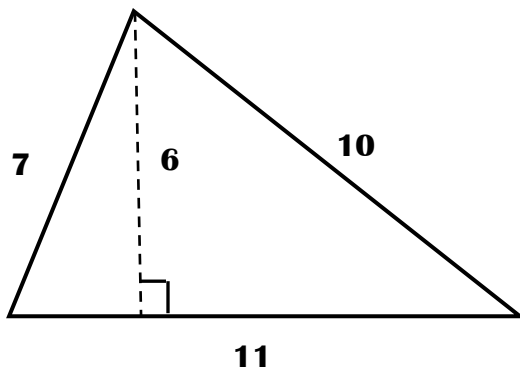
A. 28 square units

B. 34 square units

C. 33 square units

D. 66 square units

**38.** What is the total surface area of the solid figure below given that the height and width of each cube is 1 inch?

1 inch

1 inch

A. 9 square units

B. 16 square units

C. 29 square units

D. 32 square units

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39. What is the volume of the solid figure below given that the width and length of each column is 2 cm and the height is 10 cm?

10 cm

2 cm

A. 14 cm³

B. 40 cm³

C. 80 cm³

D. 120cm³

40.

5 in

1ft
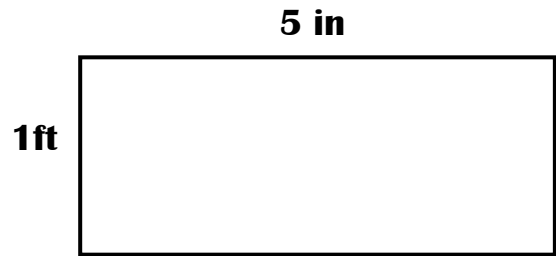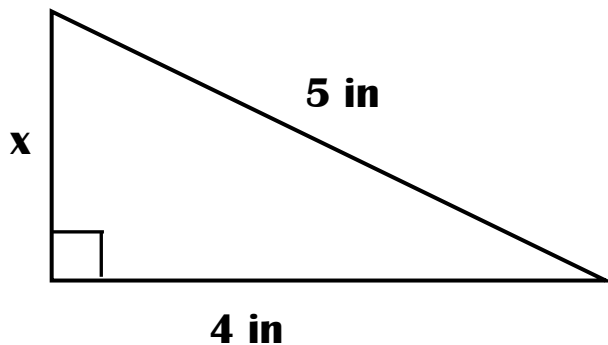
The area of the rectangle above in <u>square inches</u> is:

   A. 60 in²

   B. 34 in²

   C. 6 in²

   D. 5 in²

41. What is the length of side x in the following triangle?
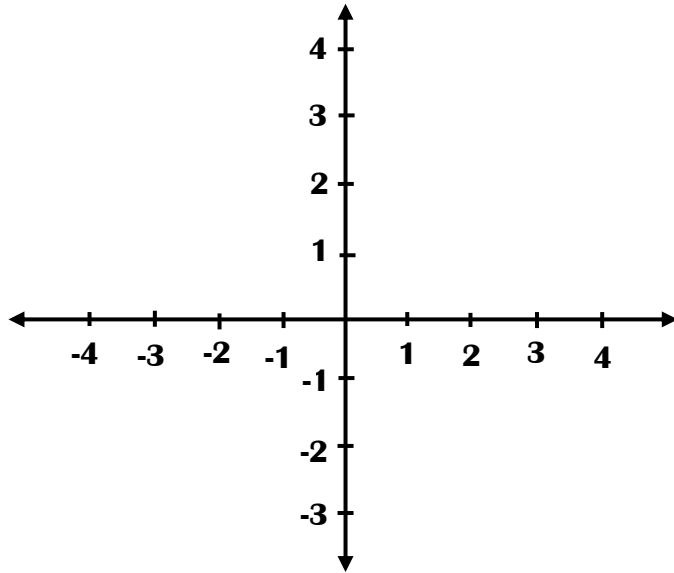
5 in

x

4 in

A. 1 inch

B. 3 inches

C. 9 inches

D. 20 inches

42. What does "congruent figures" mean? Draw any two congruent figures below.
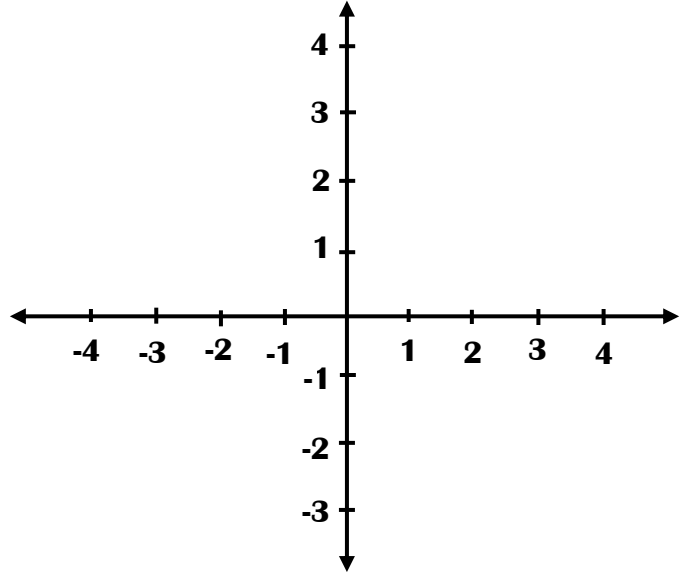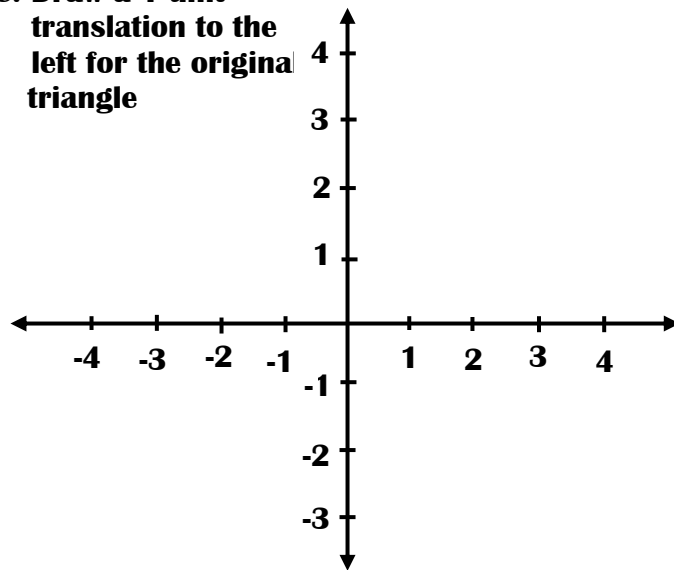
43.
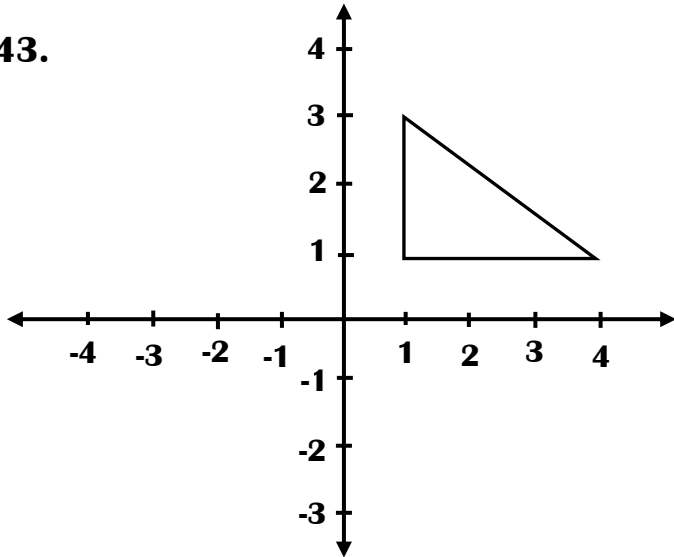
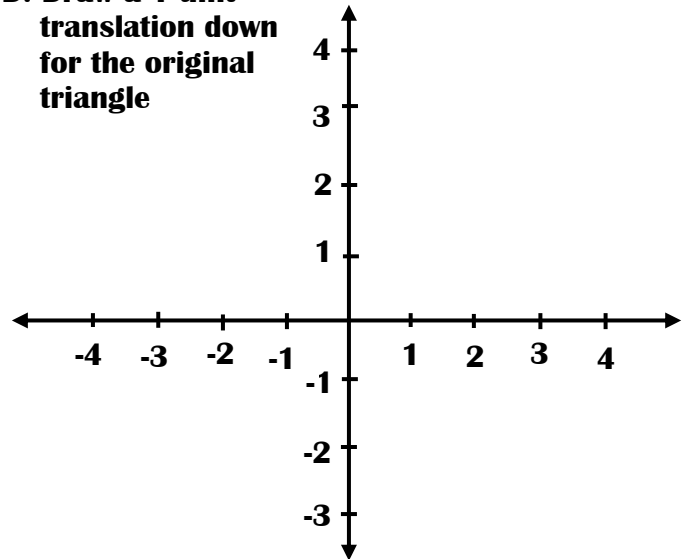**A. Draw a reflection of the triangle above across x-axis**

B. Draw a reflection of the triangle above across the y-axis

C. Draw a 1 unit translation to the left for the original triangle

D. Draw a 1 unit translation down for the original triangle

44. Jose wants to reduce his TV watching time by half. What operation below <u>will not</u> result in the new time that Jose wanted to compute?

A. Divide Jose's original time by $\frac{1}{2}$

B. Multiply Jose's original time by $\frac{1}{2}$

C. Multiply Jose's original time by 0.5
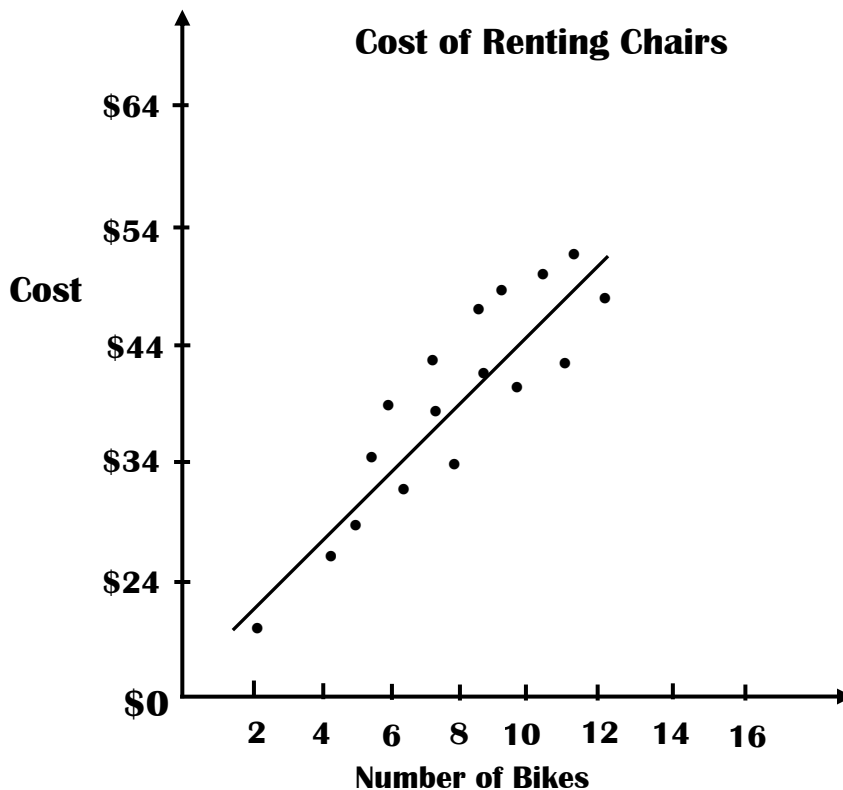
D. Divide Jose's original time by 2

45.

x	y
30	5
6	1
18	3
24	4

In the table above, what is the relationship between x and y?

A. $y = 6x$

B. $y = \frac{1}{5}x$

C. $y = \frac{1}{6}x$

D. $y = x - 25$

46. By extending the best fit line below, which of the following approximates the cost per chair, to rent 16 chairs?

Cost of Renting Chairs

Cost

Number of Bikes

47. What operation should you use to solve the following problem?

A recipe for one person calls for 2/3 of a cup of flour. How many cups of flour are needed for 6 people?

A. Division

B. Multiplication

C. Subtraction

D. Inverse of multiplication

48. What is the value of $-x$ if $x = -\dfrac{1}{10}$?

A. -10

B. $-\dfrac{1}{10}$

C. $\dfrac{1}{10}$

D. 10

49. What is the solution set for

$6|x| = 18$?

A. $\{0, 3\}$

B. $\{3, -3\}$

C. $\{0, 12,\}$

D. $\{12\}$

50. $2(x-6) - 4(x+2) = 20$ is equivalent to:

A. $2x - 12 + 4x + 8 = 20$

B. $2x - 6 - 4x - 2 = 20$

C. $2x - 12 - 4x - 8 = 20$

D. $2x - 6 - 4x - 8 = 20$

51. Find the value of x in the following inequality:

$$12x - (7x - 6) < 41$$

52. Which of the following points lies on (satisfies the equation of) the line $2x + 3y = 12$

A. $(4, 0)$

B. $(0, 4)$

C. $(4, 1)$

D. $(4, 2)$

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53. **What is the slope of a line that is parallel to the line** $y = -\frac{2}{3}x + 7$

   A. $-\frac{2}{3}$
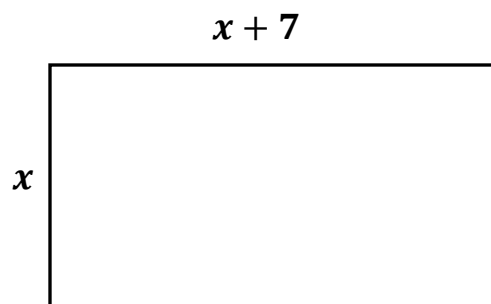
   B. $\frac{2}{3}$

   C. 7

   D. $-\frac{3}{2}$

54. **What is the solution to the system of equations:**

$$3x + 2y = 14$$
$$-y + 4x = 4$$

   A. (4, 2)

   B. (2, 4)

   C. (1, 4)

   D. (1, -4)

55. **Which expression below represents the area of the following rectangle?**
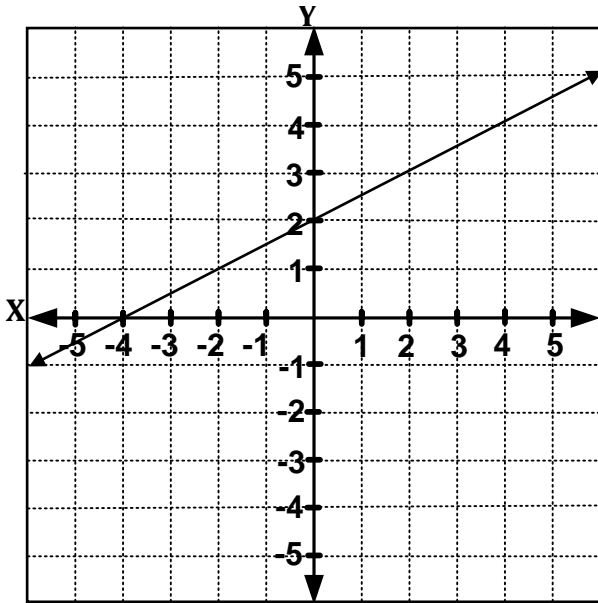
$x + 7$

x

   A. $x^2 + 7$
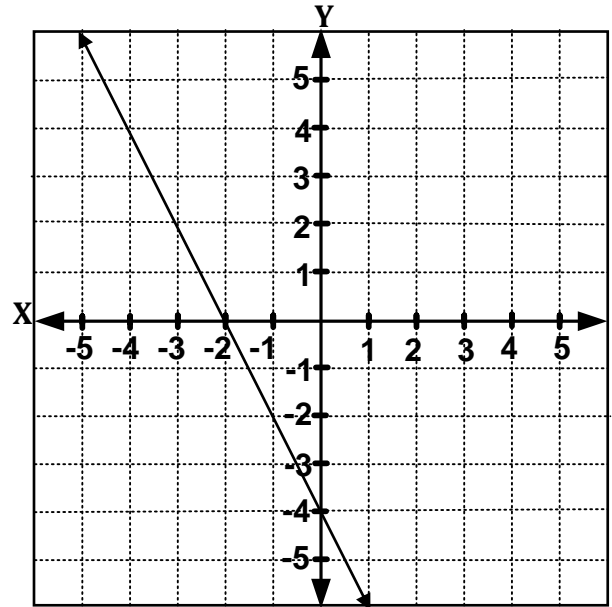
   B. $4x + 14$

   C. $x^2 + 7x$

   D. $2x + 7$

56. **You and your best friend are tasked with peeling bananas to make a huge fruit salad. You can peel 60 bananas in 10 minutes and your friend can peel 40 in 10 minutes. Working together, how many minutes will it take the two of you to peel 300 bananas?**
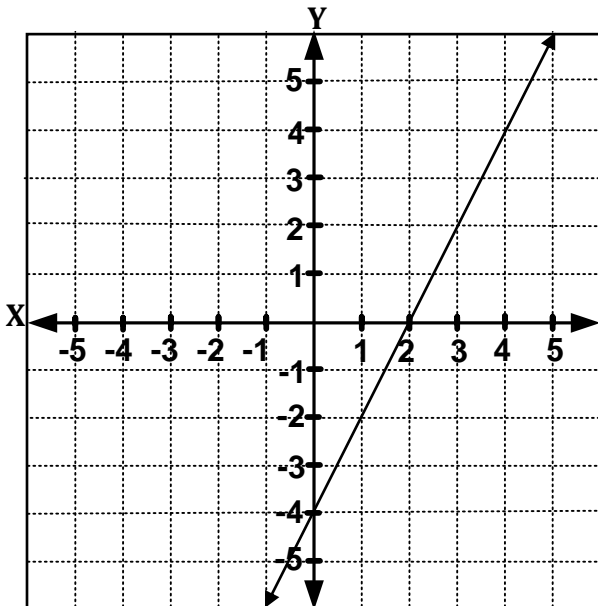
57. **Which graph below represents the line y = 2x – 4?**
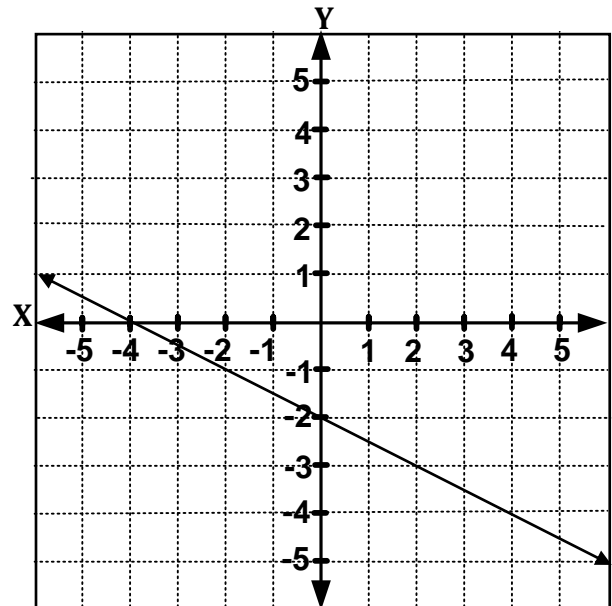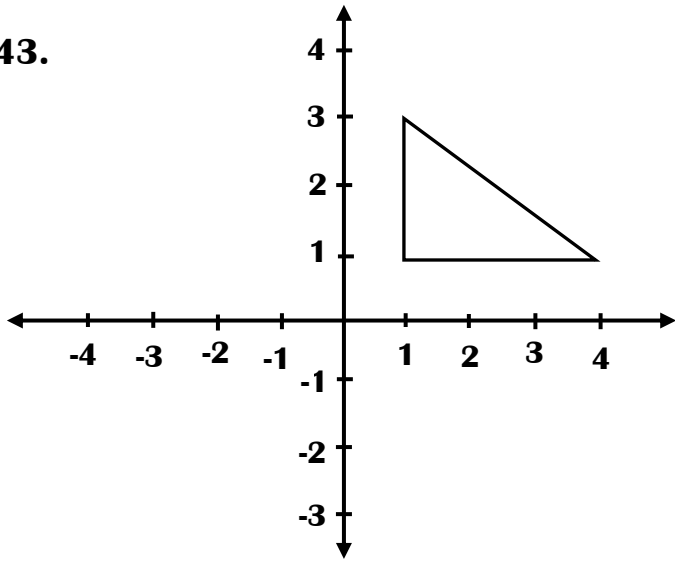
A.

B.

C.

D.

58. **Solve the inequality** $4(3x - 2) - 10x < 12$

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Answer key for CAHSEE Practice and Study Guide

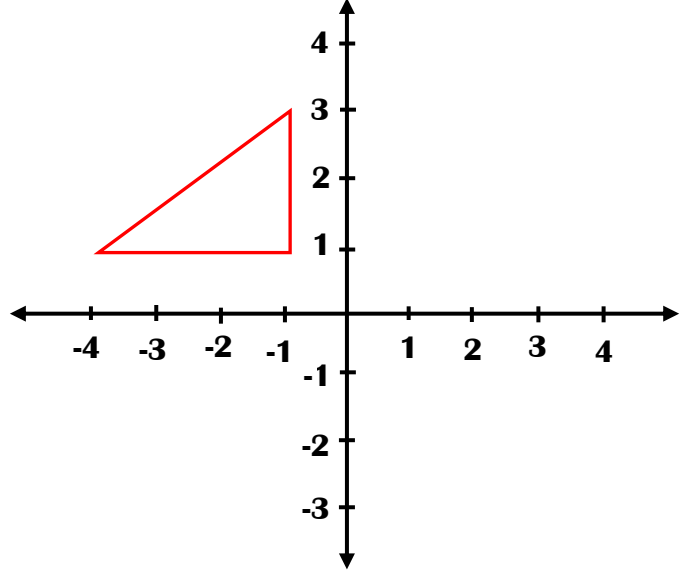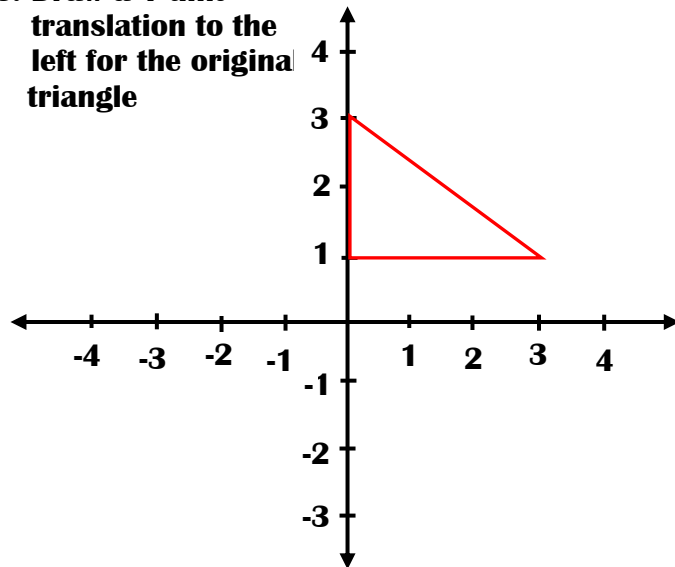|		
1. C	2. 6 cans	3. B
4. 0.625	5. D	6. $66\frac{2}{3}\%$
7. $70	8. A	9. 44.44%
10. C	11. A	12. C
13. D	14. B	15. 22
16. 4	17. D	18. A: 12 Choices B: $\frac{1}{12}$
19. C	20. A	21. B
22. D	23. C	24. A
25. A	26. 50	27. B
28. A	29. A	30. B
31. D	32. A	33. $0.15 per minute
34. 12 days	35. A	36. 27
37. C	38. D	39. D
40. A	41. B	42. Same size and shape
43. Drawings – See next page	44. A	45. C
46. 64/16 = $4	47. B	48. C
49. B	50. C	51. x < 7
52. B	53. A	54. B
55. C	56. 30 minutes	57. C
58. x < 10		59.

43.

A. Draw a reflection of the triangle above across x-axis

B. Draw a reflection of the triangle above across the y-axis

C. Draw a 1 unit translation to the left for the original triangle

D. Draw a 1 unit translation down for the original triangle