




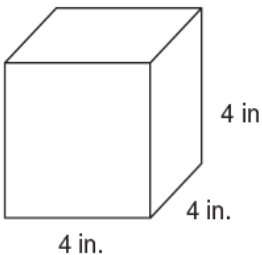


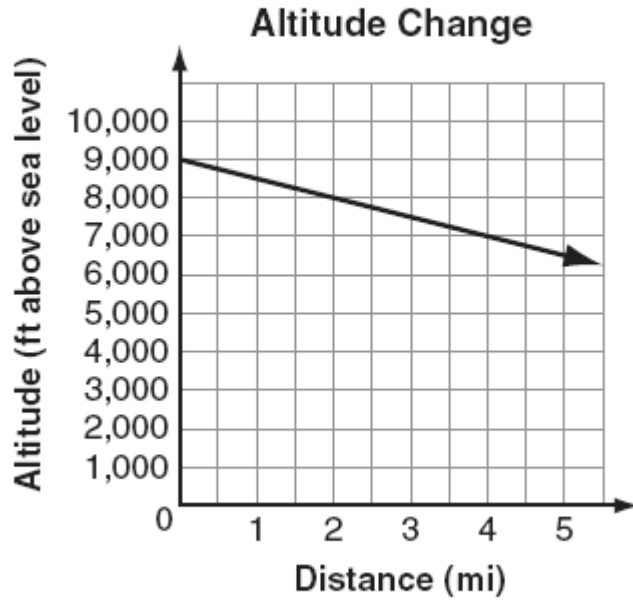
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1.	 <p>1 Look at this inequality.</p> $\boxed{?} > -15 $ <p>Which expression makes the inequality true?</p> <p>Explain your reasoning.</p>
2.	 <p>11 Megan made 3 posters in 15 minutes. At that rate, how long will it take Megan to make 24 posters?</p>
3.	 <p>3 Jason buys sports equipment worth \$80.00 and pays 5% sales tax. What is the total amount Jason pays, including sales tax, for the sports equipment? Show all your work.</p>
4.	 <p>11 Write two numbers so that</p> <ul style="list-style-type: none">• the first number is less than the second number, and• the absolute value of the first number is greater than the absolute value of the second number.
5.	 <p>13 Morgan and Ted each earn \$8 per hour. Today Ted started work $\frac{1}{2}$ hour after Morgan. They stopped working at the same time.</p> <p>a. Write an algebraic expression that shows how much money Morgan earned for the number of hours, m, she worked.</p> <p>b. Write an algebraic expression that shows how much money Ted made in terms of m, the number of hours Morgan worked.</p>

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6.	<p>7 The equation below shows the profit, p, from selling n cups of lemonade.</p> $p = 2n - 10$ <p>As n increases, what happens to the value of p?</p> <p>Justify your answer.</p>			
7.	<p>10 A mathematics game uses a set of 44 cards. There are 4 cards for each of the numerals 0–9 and 4 wild cards. If the cards are shuffled, what is the probability that the top card is a wild card?</p>			
8.	<p>11 Brett bought a fishbowl for \$8.00 and n goldfish for \$1.50 each. He used a coupon for \$2.00 off his purchases. Write an algebraic expression that represents the amount of money Brett paid for his purchases.</p>			
9.	<p>13 Each edge of this cube is 4 inches long.</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>What is the surface area and volume of the cube in square inches? Show your work or explain how you know.</p>			
10.	<p>15 Three music stores are having CD sales this week. The signs below describe the sales at each store.</p> <table style="width: 100%; text-align: center; border-collapse: collapse; margin: 10px 0;"> <tbody> <tr> <td style="border: 1px solid black; padding: 10px; width: 33%;"> <p>The Music Store</p> <p>All CDs— Take 30% off the original price!</p> </td> <td style="border: 1px solid black; padding: 10px; width: 33%;"> <p>The Sound Shop</p> <p>All CDs— Take $\frac{1}{4}$ off the original price!</p> </td> <td style="border: 1px solid black; padding: 10px; width: 33%;"> <p>The Listening Corner</p> <p>All CDs— Pay $\frac{2}{3}$ of the original price!</p> </td> </tr> </tbody> </table> <p>Jeremy wants to buy a CD that had the same original price at all three stores.</p> <p>List the stores in order from the one where the CD is the least expensive to the one where it is the most expensive. Show your work or explain how you know.</p>	<p>The Music Store</p> <p>All CDs— Take 30% off the original price!</p>	<p>The Sound Shop</p> <p>All CDs— Take $\frac{1}{4}$ off the original price!</p>	<p>The Listening Corner</p> <p>All CDs— Pay $\frac{2}{3}$ of the original price!</p>
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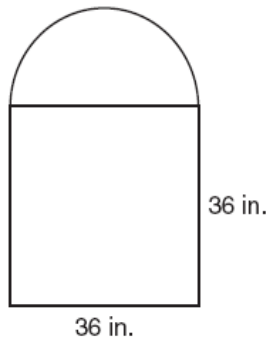
- 6 This graph shows the relationship between the altitude of an airplane and the distance it travels while it is descending.



11.

What is the slope of this line? Show your work.

- 14 The shape of the window shown below is made up of a square and a semicircle.



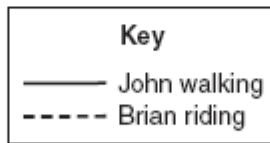
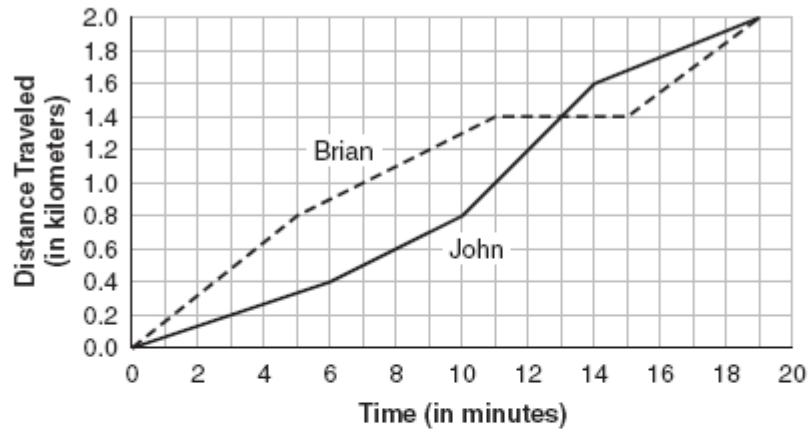
12.

What is the area of the window to the nearest square inch? Show your work or explain how you know.

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13.

- 15 John and Brian each live 2 kilometers from their school. John walks to school and Brian rides his bicycle. These graphs show the distance each boy travels to school.



- a. How many kilometers does John walk between minutes 3 and 8?
- b. What is the speed that Brian is riding his bicycle between minutes 11 and 15?
- c. Between which minutes do John and Brian travel at the same speed? Explain how you know.

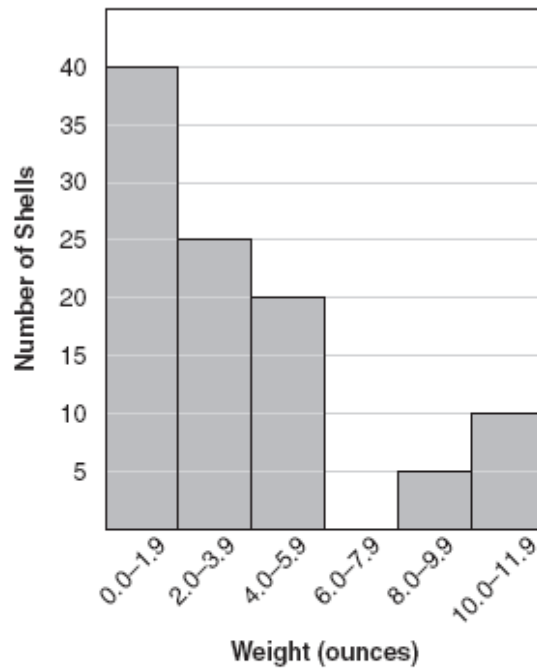
14.

- 13 The lengths of two sides of a triangle are 20 cm and 32 cm.
- a. Explain why the third side of the triangle can or cannot have a length of 10 cm.
 - b. Explain why the third side of the triangle can or cannot have a length of 48 cm.

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15.

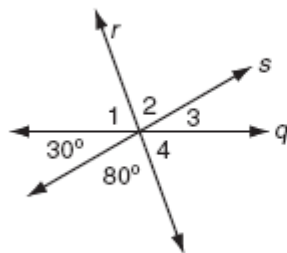
15 Terry weighed each of the seashells in his collection to the nearest tenth of an ounce. This histogram displays his results.



- How many seashells are in Terry's collection altogether?
 - Explain whether or not the median weight of Terry's seashells is between 4.0 and 5.9 ounces.
- Terry adds another seashell to his collection. The new seashell weighs 27.8 ounces.
- Explain whether or not the **mode** of the weights will change when Terry includes 27.8 ounces.
 - Explain whether or not the **mean** of the weights will change when Terry includes 27.8 ounces.

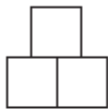
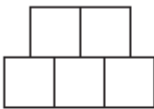
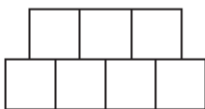
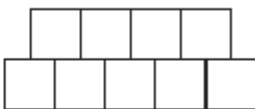
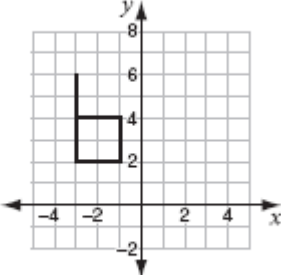
16.

1 In the diagram below, lines r , s , and q intersect at one point.



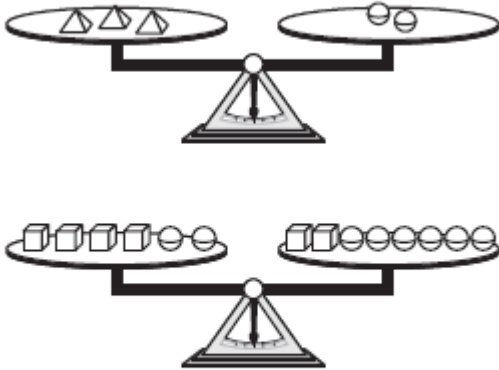
What is the sum of the measures of $\angle 3$ and $\angle 4$? Prove your answer is correct.

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17.	<p>2 Look at this pattern.</p> <div style="display: flex; justify-content: space-around; align-items: center; margin: 10px 0;"> <div style="text-align: center;">  <p>Figure 1</p> </div> <div style="text-align: center;">  <p>Figure 2</p> </div> <div style="text-align: center;">  <p>Figure 3</p> </div> <div style="text-align: center;">  <p>Figure 4</p> </div> </div> <p>A. Draw figure 5, B. Write the rule that represents the number of boxes used to make any sized figure. C. Use your rule to determine the number of boxes in the 99th figure.</p>
18.	<p>5 Andrea has \$20 in her savings account. She will add \$3 per week to her savings account for n weeks. Write an algebraic expression to show the total amount of money Andrea will have in her savings account after n weeks.</p>
19.	<p>6 Anna and Barb practiced serving a volleyball over the net.</p> <ul style="list-style-type: none"> • Anna served the ball over the net 18 out of 25 times. • Barb served the ball over the net 75% of the time. <p>Use fractions, decimals, or percents to show or explain which girl had the greater rate of success in serving the ball over the net.</p>
20.	<p>7 Sean and Barry are participating in a 30-mile bike race. Sean averages 20 miles per hour and Barry averages 15 miles per hour. How many miles will Barry be from the finish line when Sean finishes the race? Show your work or explain how you know.</p>
21.	<p>12 Write four different numbers for which both of these statements are true.</p> <ul style="list-style-type: none"> • The range is 8. • The mean and median are the same number.
22.	<p>4 Look at this figure on the grid.</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>Draw on the grid the figure after it is reflected over the y-axis.</p>

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23. 9 These scales are balanced.



How many \triangle weigh the same as one \square ?

Justify your answer.

24. 10 The table below shows how blood types are distributed in the American population.

Blood Type	Percent of Population
O	43%
A	40%
B	12%
AB	5%

Create the graph that best displays the data in the table?

25. 12 The sum of the measures of the interior angles of a regular polygon is 540° . How many sides does the polygon have? Show or explain your work.

26. 14 The table below shows scores on a mathematics placement exam reported from five different schools.

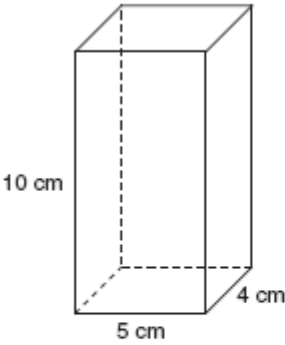

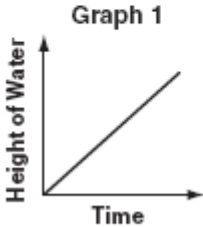
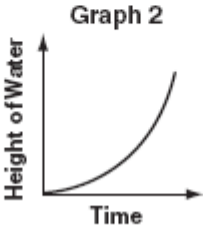
School	Score
Bayview Middle School	35.4
Mountain Top Middle School	30.9
Sunset Middle School	26.1
Evergreen Middle School	30.3
Gateway Middle School	31.3

Based on these data, the mean school score is 30.8. An error was found in the Sunset Middle School score. The correct score is:

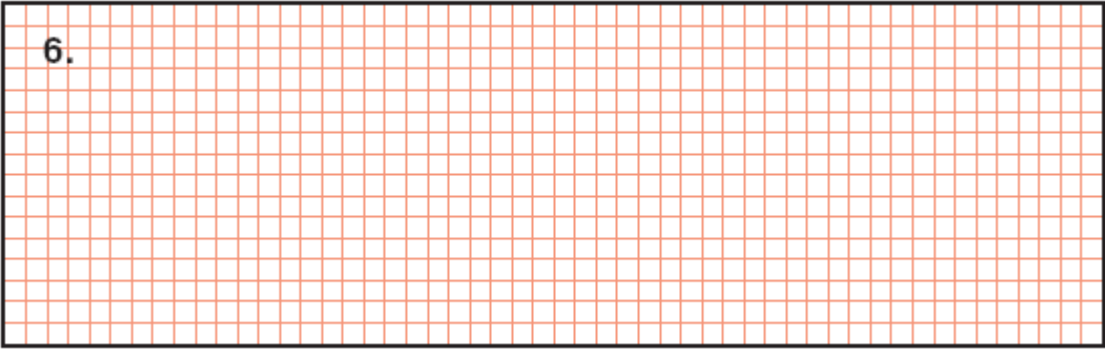
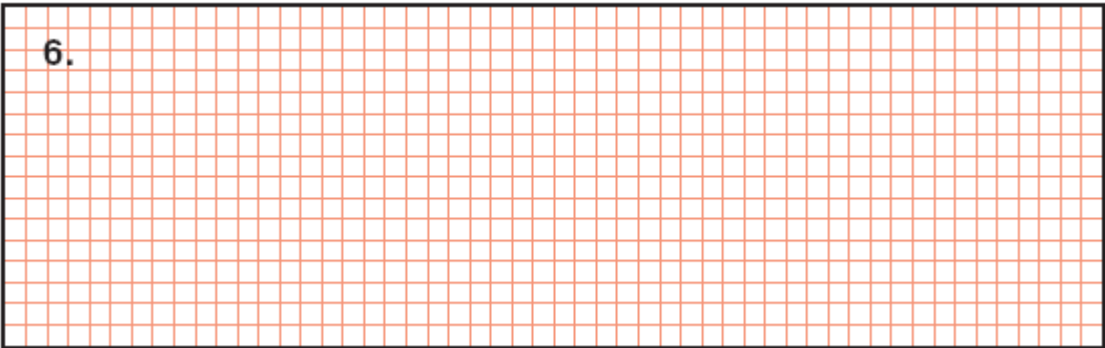
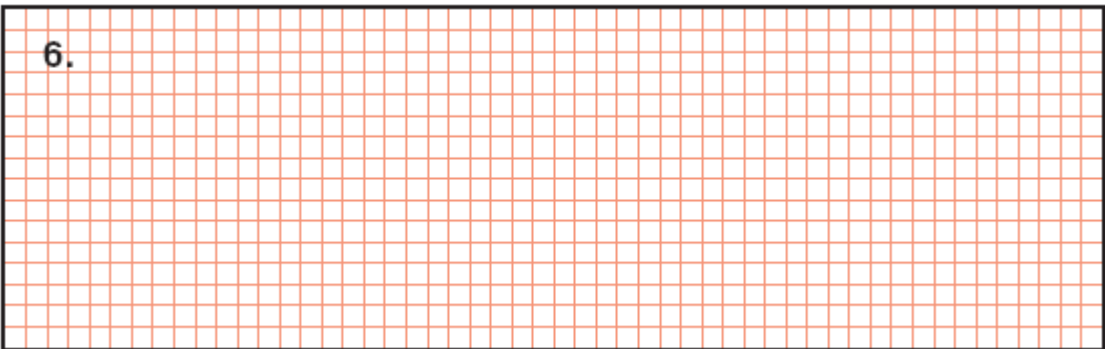
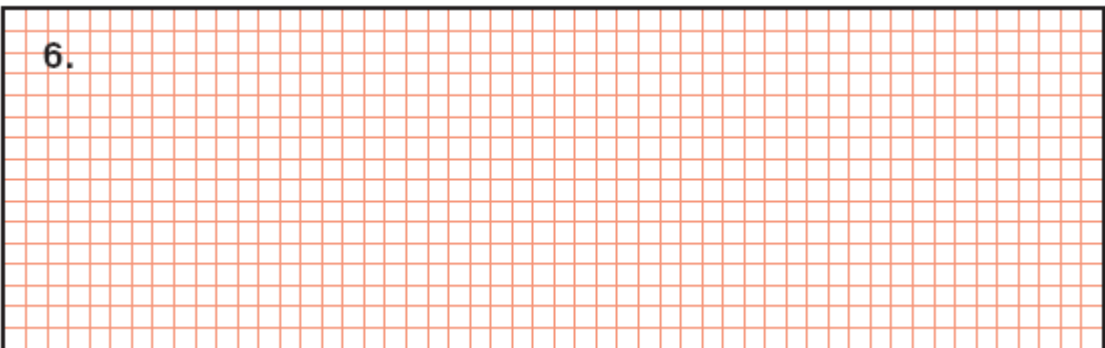
Sunset Middle School	Correct score: 29.6
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What is the corrected mean school score? Show your work or explain how you know.

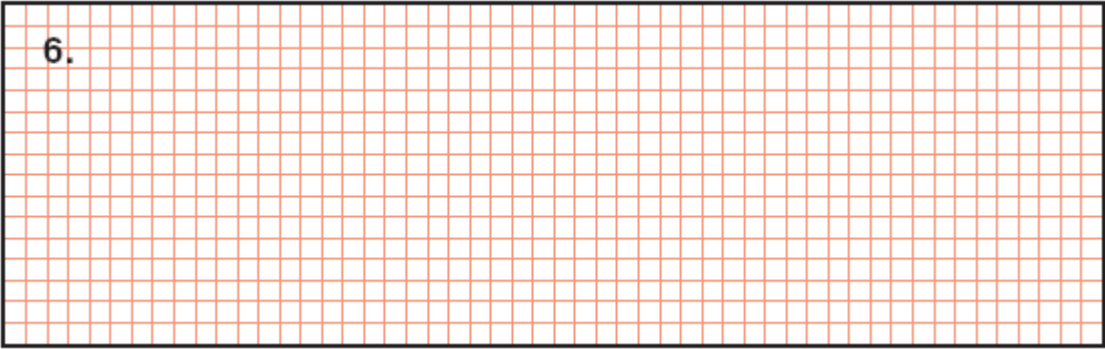
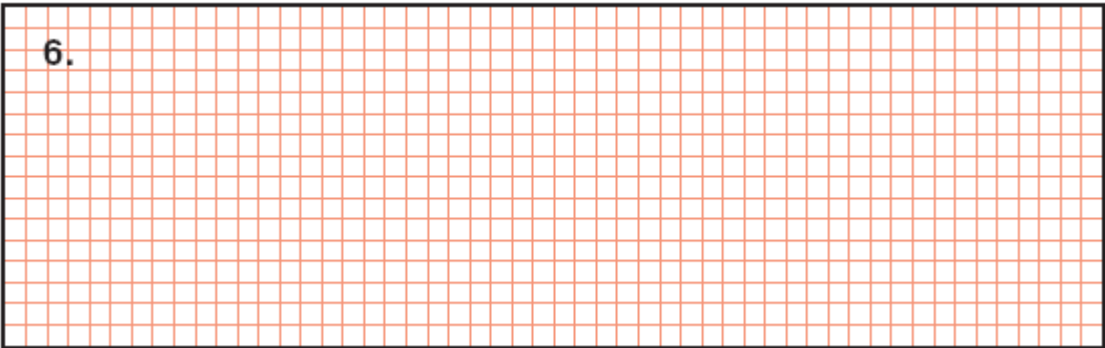
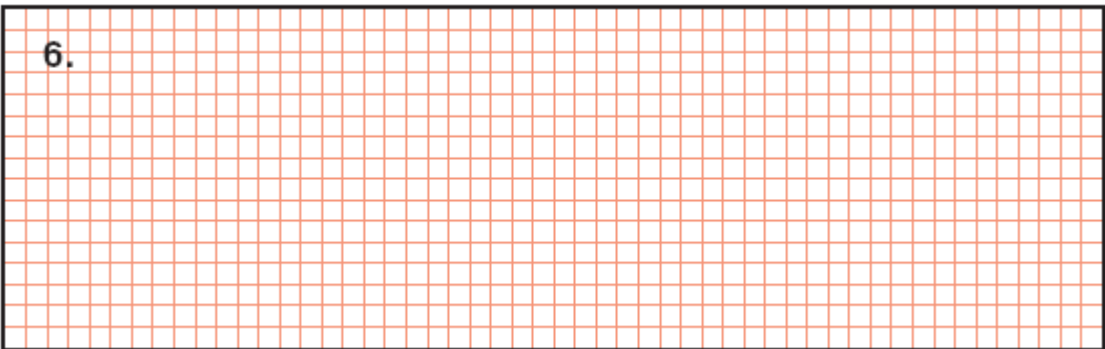
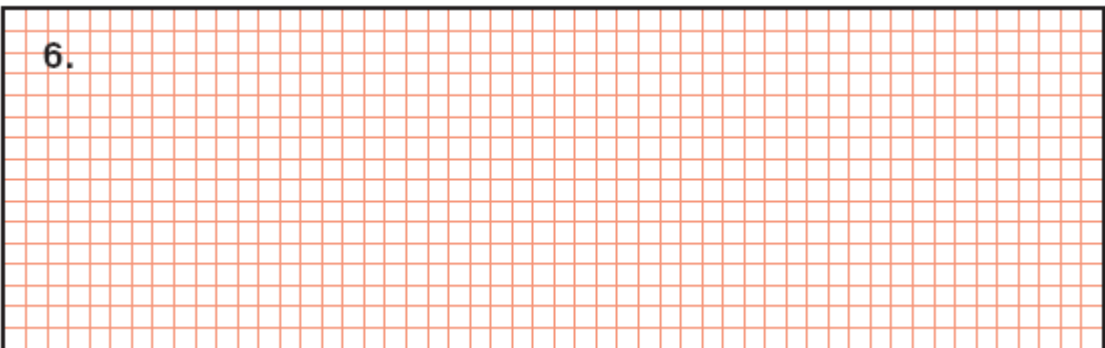
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27.	<p>15 This diagram shows the dimensions of a container in the shape of a rectangular prism.</p> <div style="text-align: center;">  </div> <p>a. What is the volume, in cubic centimeters, of the container? Show your work or explain how you know.</p> <p>b. A different container is also a rectangular prism and has the same volume as the container in part a. This container has a square base with side lengths of 5 cm. What is the height, in centimeters, of this container? Show your work or explain how you know.</p>
28.	<p>12 Look at this container.</p> <div style="text-align: center;">  </div> <p>Water flows into this container at a constant rate. Look at Graph 1 and Graph 2 below.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Graph 1</p>  </div> <div style="text-align: center;"> <p>Graph 2</p>  </div> </div> <p>Explain how you know which graph best represents the height of the water over time.</p>
29.	<p>14 Triangle ABC has a base of 5 inches and a height of 4 inches. Triangle ABC is similar to triangle DEF. Triangle DEF has dimensions that are 3 times as great as those of triangle ABC. How many times as great is the area of triangle DEF compared to the area of triangle ABC? Show your work or explain how you know.</p>
30.	<p>15 When a knight sets out on a quest, he must choose a road to follow.</p> <ul style="list-style-type: none"> • 3 out of every 5 knights take the High Road. The others take the Low Road. • Of the knights taking the High Road, 80% are successful in their quest. The others fail. • Of the knights taking the Low Road, 40% are successful in their quest. The others fail. <p>a. A knight is chosen at random. What is the probability he will take the Low Road? Show your work or explain how you know.</p> <p>b. A knight is chosen at random. What is the probability he will take the High Road and succeed in his quest? Show your work or explain how you know.</p>

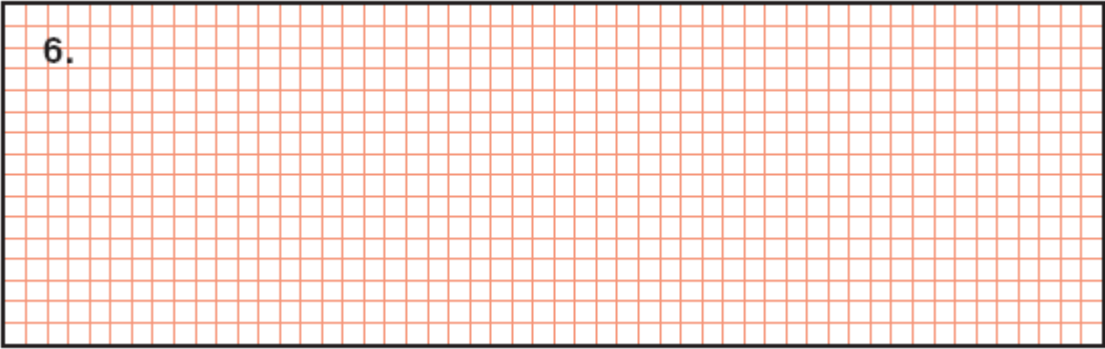

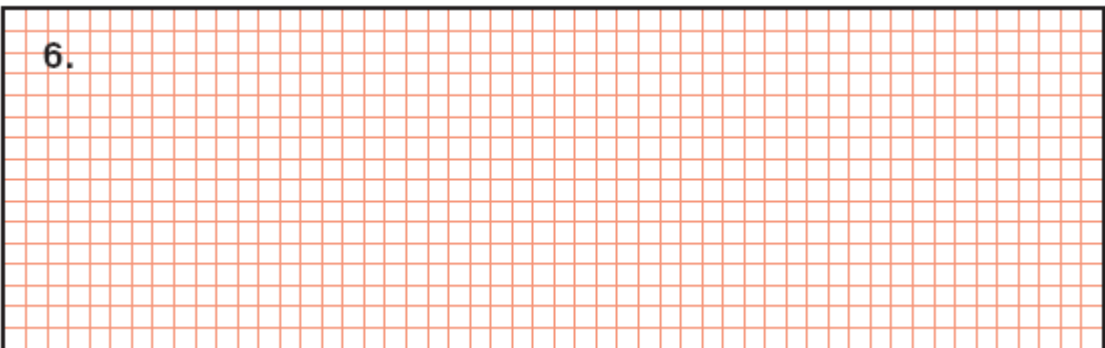
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1.	<p>6.</p> 
2.	<p>6.</p> 
3.	<p>6.</p> 
4.	<p>6.</p> 

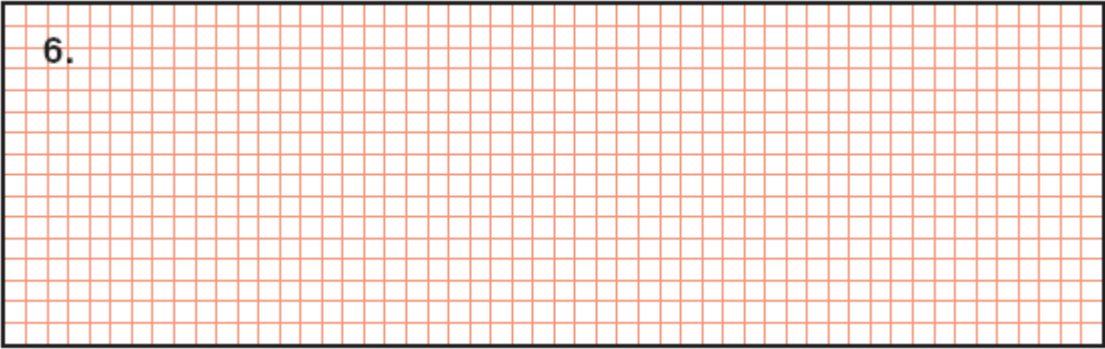

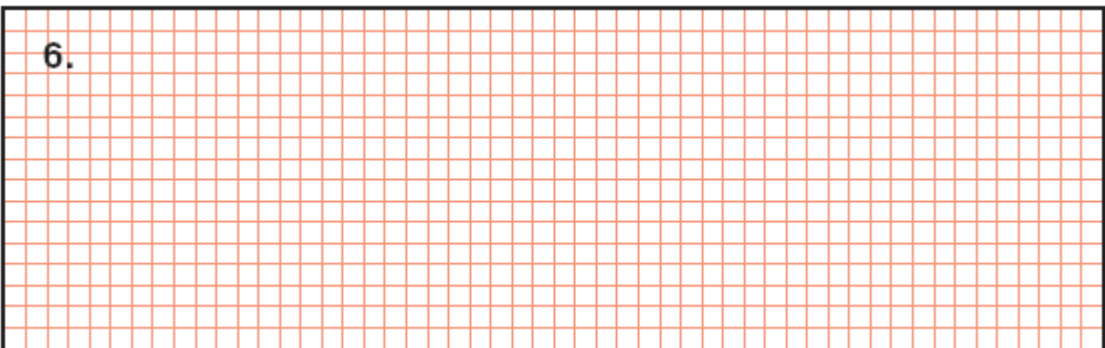
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5.	<p>6.</p> 
6.	<p>6.</p> 
7.	<p>6.</p> 
8.	<p>6.</p> 


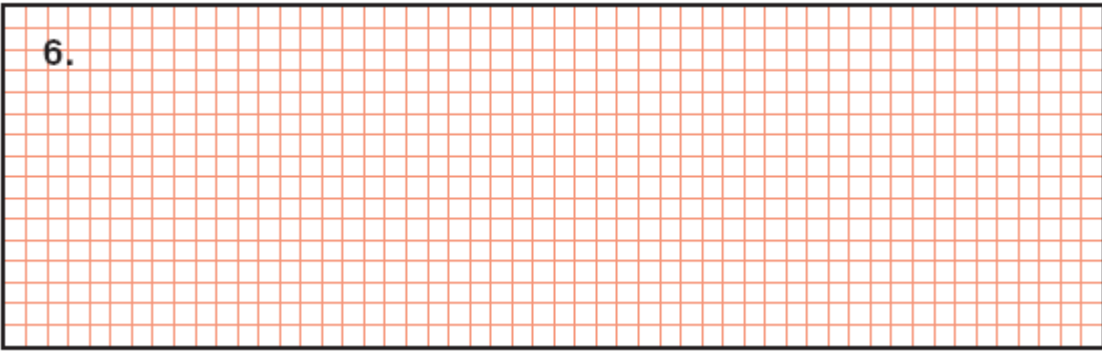
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9.	<p>6.</p> 
10.	<p>13.</p> 
11.	<p>6.</p> 

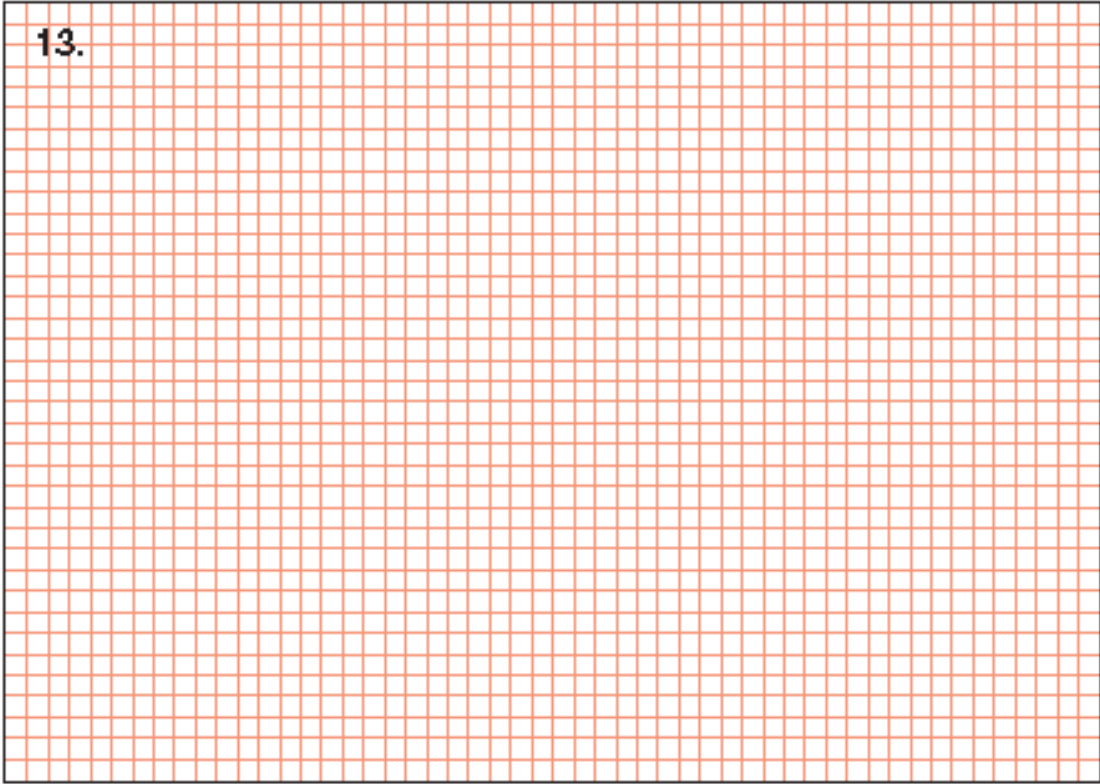
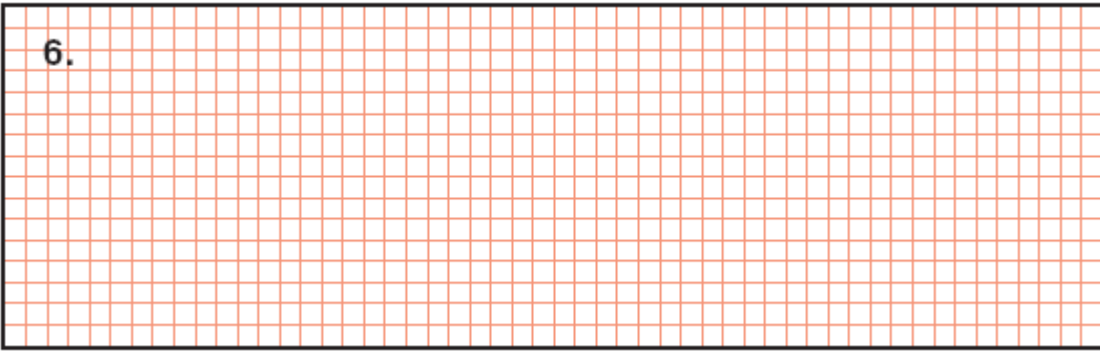
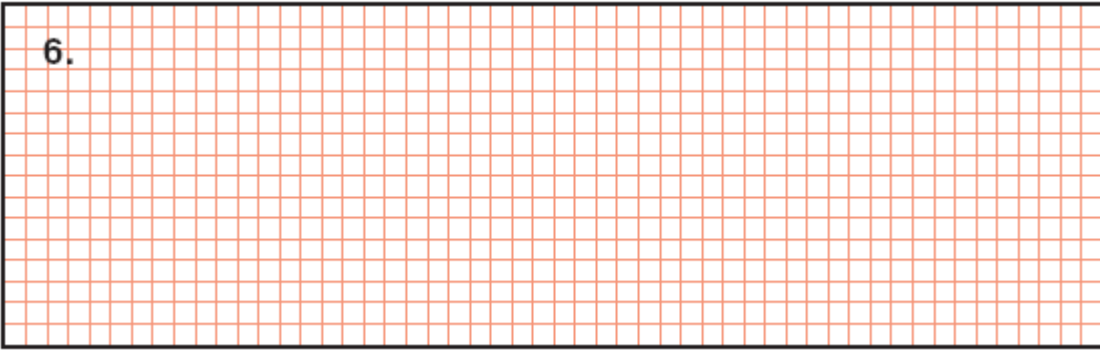
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12.	<p>6.</p> 
13.	<p>13.</p> 
14.	<p>6.</p> 

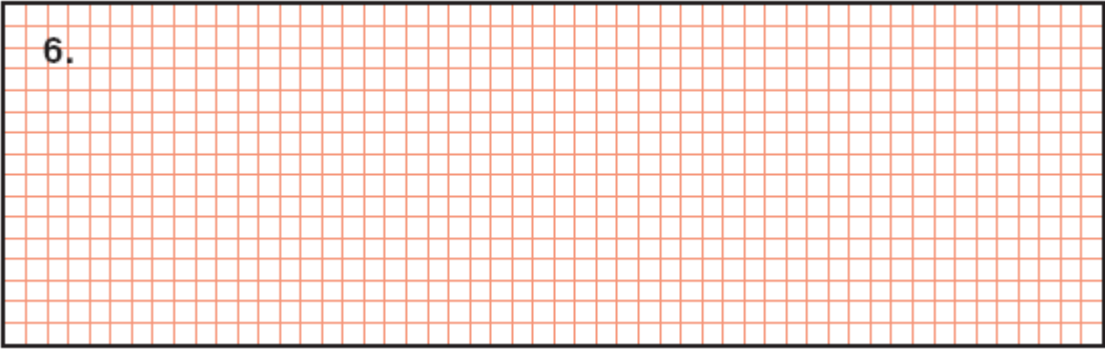
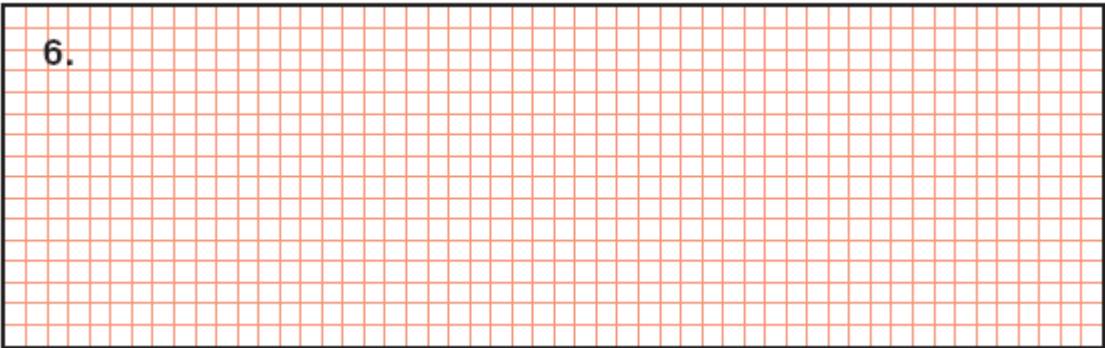
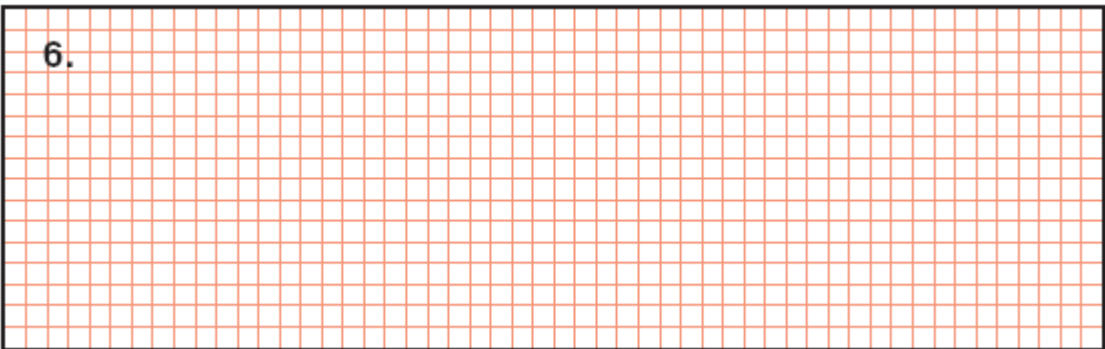
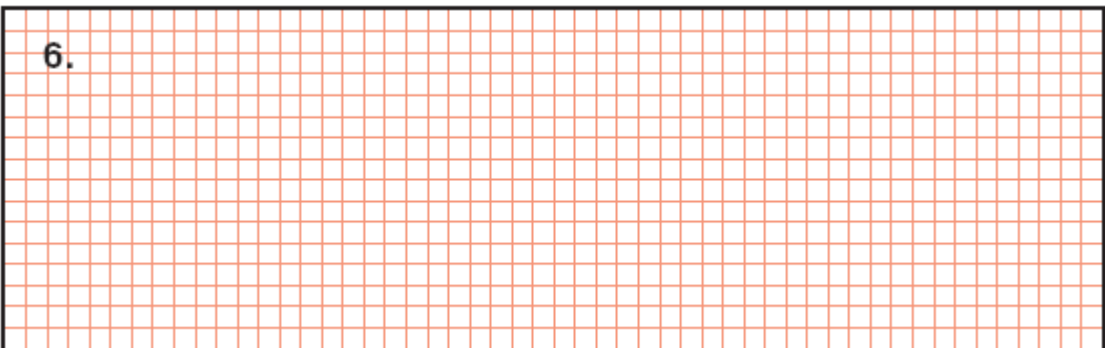
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16.	<p>6.</p> 

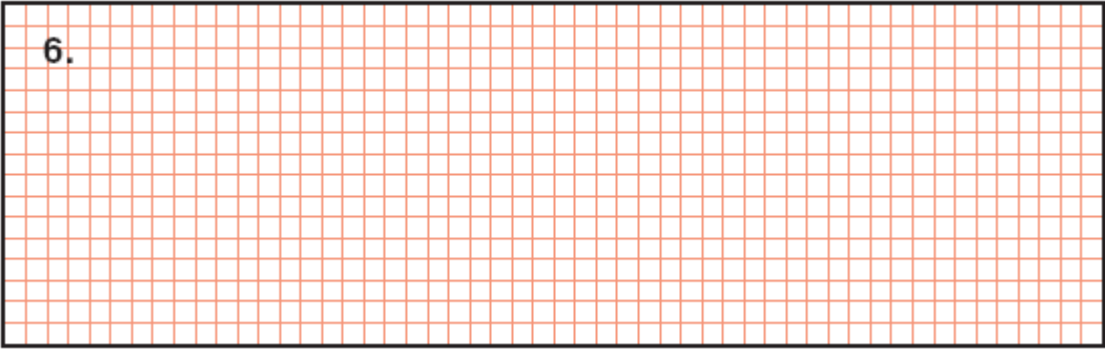
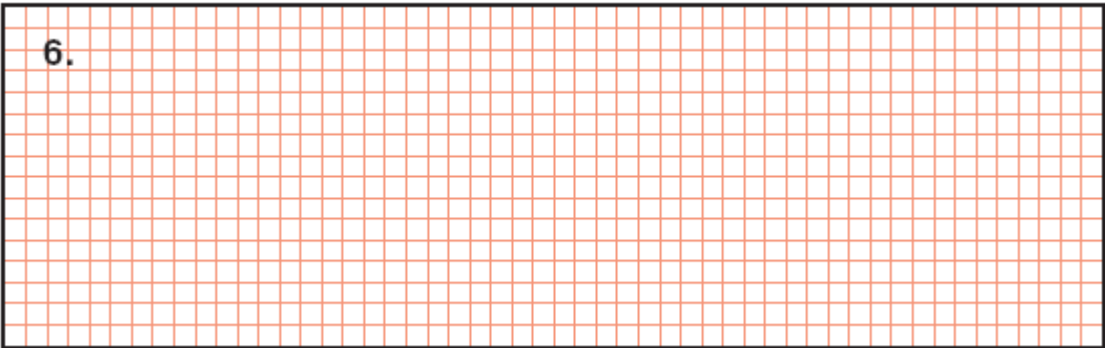
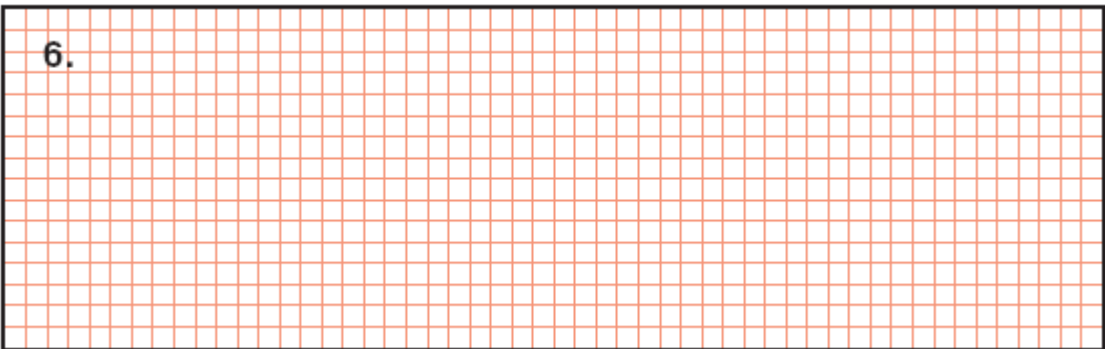
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17.	<p>13.</p> 
18.	<p>6.</p> 
19.	<p>6.</p> 


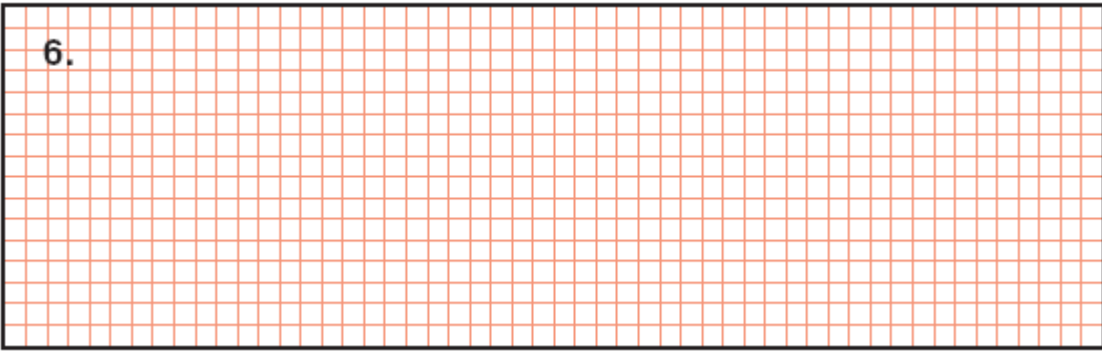
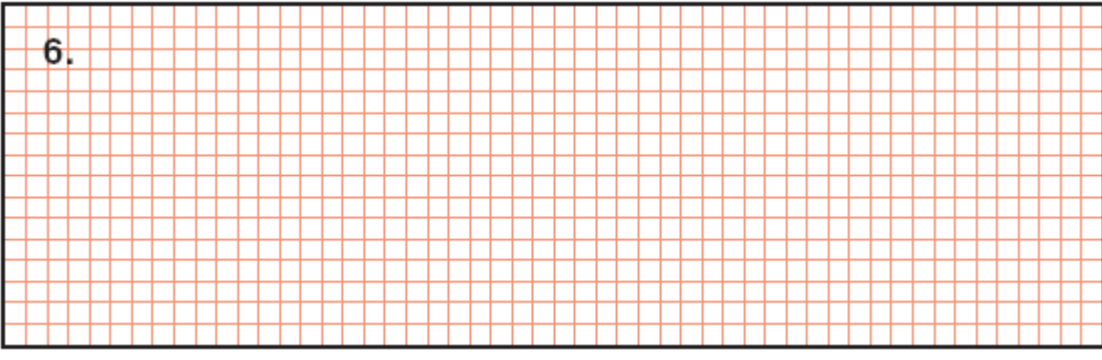
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20.	<p>6.</p> 
21.	<p>6.</p> 
22.	<p>6.</p> 
23.	<p>6.</p> 

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24.	<p>6.</p> 
25.	<p>6.</p> 
26.	<p>6.</p> 

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27.	<p>13.</p> 
28.	<p>6.</p> 
29.	<p>6.</p> 

<p>30.</p>	<p>13.</p> 