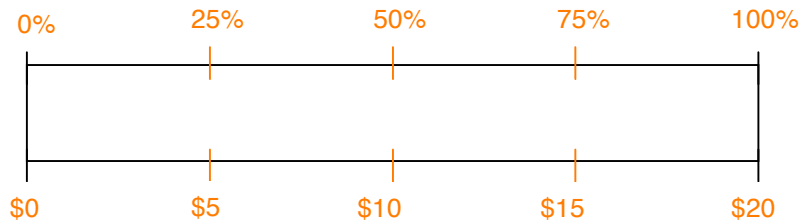




Represent and solve each problem by using percent bars.

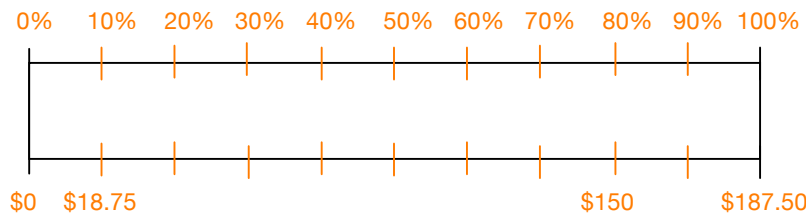
- The original price of a poster is \$20. The sale price is 75% of the original price. What is the sale price?

Use the percent bar to show the original price of \$20. It is easy to determine that 50% is \$10, so 25%, which is half of 50%, must be \$5. To find 75%, simply multiply \$5 by 3. Seventy-five percent of \$20 is \$15. The sale price is \$15.



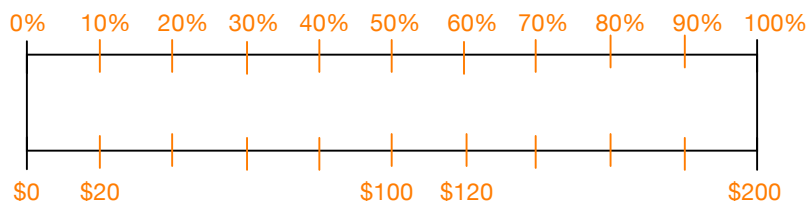
- A cell phone was priced at \$150. That price was 80% of the original price. What was the original price?

Use the percent bar to show that the sale price, which was 80% of the original, was \$150. You want to find the original price. You can easily determine 10% since it is $\frac{1}{8}$ of 80%. Therefore, 10% must be \$18.75. And 100%, or the original price, must be 10 times 10% or \$187.50.



- A warm-up jacket was priced at \$120, reduced from \$200. What percent of the original price is the sale price?

One hundred dollars would be 50% of the original price. Since the sale price is larger than \$100, the sale price is more than 50% of the original price. \$200 divided by 10 is \$20, so ten percent of the original price would be \$20. Since \$120 is $6 \times \$20$, the sale price represents 60% of the original price because $6 \times 10\%$ is 60%.



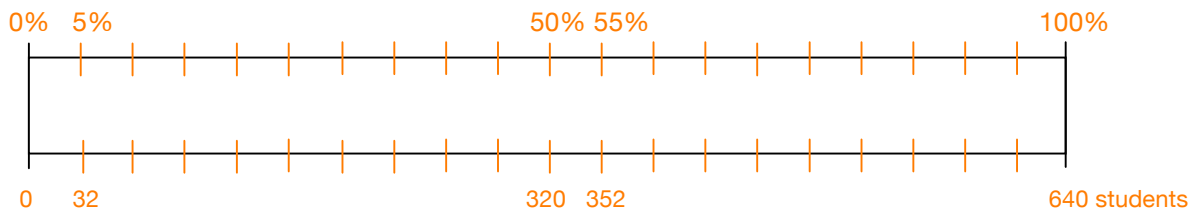


Sketch percent bars to represent each problem. Use your representation to solve the problem.

4. There are 640 sixth graders at Harrison School.

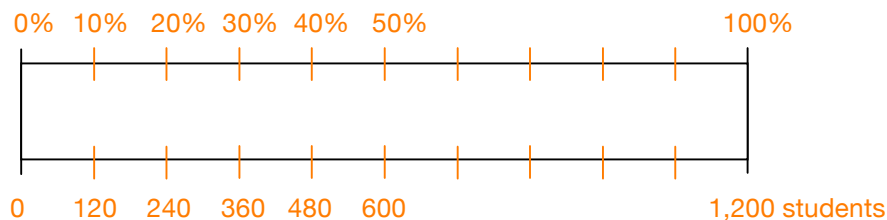
a. Fifty-five percent of the sixth graders are girls. How many girls are in the sixth grade?

Since we need to find 55%, we can first find what 50% is and then add 5% of the total number of sixth graders. Six hundred forty divided by 2 is 320, so 50% is 320 students. Because 5% is $\frac{1}{20}$ of 100%, we can divide the number line into 20 equal parts. By doing this, we see that 5% of the total number of sixth graders is 32 students. We then add this to 320 students to get a total of 352 students. This means that 352 of the sixth graders are girls.



- b. Only fifth and sixth graders go to Harrison. There are 560 fifth graders. About what percent of the school are fifth graders?

The total number of students is 1,200 because there are 560 fifth graders and 640 sixth graders. We know the number of fifth graders is less than 50% of the school because 50% would be 600 students and 560 is less than that. We can figure out 10% of the school by dividing the percent bar into 10 equal parts. Ten percent of the school is 120 students because 1,200 divided by 10 is 120. If we continue to mark each additional 10%, we see that 560 students is between 40% and 50% of the school. Since it is a lot closer to 50%, estimate it to be about 47%.



5. In one classroom, 15 students made the honor roll. That was 75% of the class. How many students are in the class?

First, we can find what 25% of the class is by dividing 15 by 3. We get 5, so five students make up 25% of the class. Since $25\% \times 4 = 100\%$, we can multiply 5 by 4 to get 20. There are 20 students in the class.

