

### Unit 7 Advanced Review - Percents

1. There are 30 students in Mrs. Jones' class. Twenty percent of the students received an A on the last math test. How many students received an A?

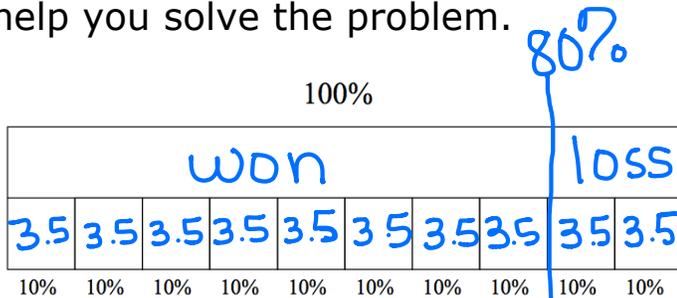
$$\frac{n}{30} = \frac{20}{100}$$

$$100n = 30 \cdot 20$$

$$\frac{100n}{100} = \frac{600}{100}$$

$n = 6$  students made A's

2. A baseball pitcher won 80% of the games he pitched. If he pitched 35 ballgames, how many games did he win? Use percent bars to help you solve the problem.



$$35 \div 10 = 3.5$$

$$\begin{array}{r} + 3.5 \\ \times 8 \\ \hline \end{array}$$

28.0 games won

3. Donovan took a math test and got 15 correct and 5 incorrect answers. What was the percentage of correct answers?

$$5 + 15 = 20 \text{ total}$$

$$\frac{15}{20} = \frac{c}{100}$$

$$20c = 15 \cdot 100$$

$$\frac{20c}{20} = \frac{1500}{20}$$

$c = 75\%$  correct

4. A total of 10 people made pies for the PTO teacher give-away. Each person made 4 pies. Mrs. Ramirez found that 20% of these pies were pumpkin. How many pumpkin pies were made for the pie giveaway?

$$10 \times 4 = 40 \text{ pies total}$$

$$\frac{x}{40} = \frac{20}{100}$$

$$100x = 40 \cdot 20$$

$$\frac{100x}{100} = \frac{800}{100}$$

$x = 8$  pumpkin pies

5. Out of 75 students, 30 play in the band. What percent of the students play in the band?

$$\frac{30}{75} = \frac{n}{100}$$

$$75n = 30 \cdot 100$$

$$\frac{75n}{75} = \frac{3000}{75}$$

$n = 40\%$  of the students play in the band

6. Only a portion of the land on Earth is farmland capable of growing food. In a particular region, 28% of the land is farmland. Express 28% as a fraction in simplest form.

$$28\% = \frac{28 \div 4}{100 \div 4} = \frac{7}{25}$$

7. Earth is made up of several different elements. Suppose a certain element makes up 8% of Earth. Express 8% as a decimal.

$$8\% = 0.08$$

8. Express the decimal 0.6 as a percent and a fraction in simplest form.

$$.6 = 60\%$$

$$\frac{60}{100} \div 20 = \frac{3}{5}$$

9. Express the fraction  $\frac{2}{5}$  as a decimal and a percent.

$$\frac{2}{5} = \frac{4}{10} = .4 = 40\%$$

10. A publisher estimates that 8 of every 50 books published become national best sellers. What percentage of the books do NOT become national best sellers?

$$50 - 8 = 42$$

$$\frac{42}{50} \times \frac{2}{2} = \frac{84}{100}$$

$$50x = 42 \cdot 100$$

$$\frac{50x}{50} = \frac{4200}{50}$$

$$x = 84\%$$

84% of the books do NOT become best seller

11. Name the percent and decimal equivalent to  $\frac{7}{20}$ . Be sure to show your work.

$$\frac{7}{20} \times \frac{5}{5} = \frac{35}{100} = 0.35$$

Percent: 35%

Decimal: .35

12. The floor of a house is 80% covered by carpeting. Write the percent of the floor covered by carpeting as a decimal and as a fraction in simplest form. Show your work.

$$80\% = .8 = \frac{8}{10} = \frac{4}{5}$$

13. Cactus plants survive in deserts by storing water in their thick stems. In fact, water makes up  $\frac{3}{4}$  of the saguaro cactus's total weight. What percent of its weight is water?

$$\frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = .75 = 75\%$$

14. Your teacher has offered you a choice for your 50 homework problems. You can do 48% of the problems, all of the even-numbered problems, or  $\frac{3}{5}$  of the problems. Which option will you choose? How many problems will you have to do for homework?

$$48\% = \frac{48}{100} \div 2 = \frac{24}{50}$$

24 problems ✓

even

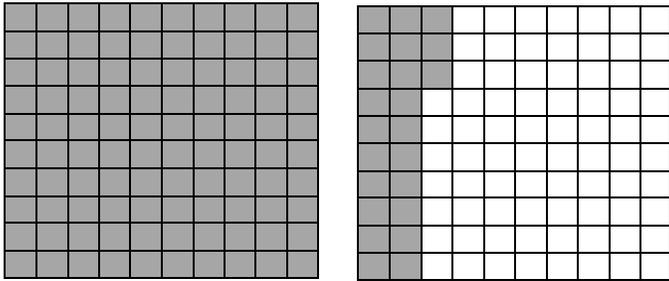
$$50\% = \frac{50}{100} \div 2 = \frac{25}{50}$$

25 problems

$$\frac{3}{5} = \frac{60}{100} \div 2 = \frac{30}{50}$$

30 problems

15. Use the model below to name how much is shaded as a fraction, decimal and percent. Make sure to simplify the fraction.



How much is shaded?

F:  $\frac{23}{100}$  D: 1.23 P: 123%

How much is not shaded?

F:  $\frac{77}{100}$  D: .77 P: 77%

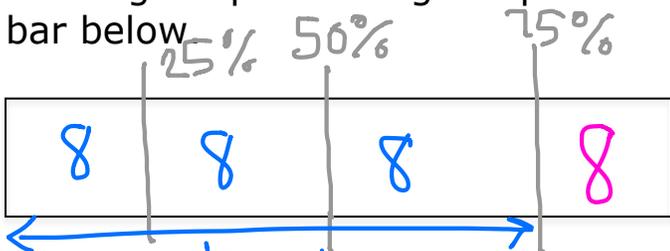
16. During a sale, everything in the store was  $\frac{1}{5}$  off the ticketed price.

What percent of an item's original price should you expect to pay?

$$\frac{1}{5} = 20\% \text{ off}$$

$$100\% - 20\% = 80\%$$

17. A shirt is on sale for \$24. This is 75% of the original price. Find the original price using the percent bar below

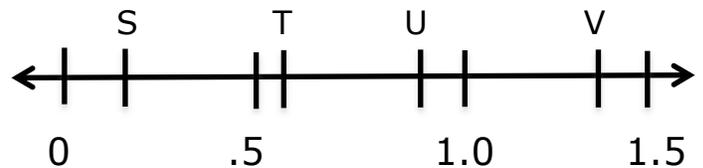


$$24 \div 3 = 8 \text{ Original price}$$

$$8 \times 4 = \$32$$

18. Match the rational number with the correct point on the number line. Some points may be used more than once.

<u>U</u>	0.9	<u>V</u>	140%
<u>S</u>	20%	<u>T</u>	$\frac{11}{20} = \frac{55}{100}$
<u>U</u>	90%	<u>V</u>	$1\frac{2}{5} = 1.4$
<u>S</u>	$\frac{1}{5}$	<u>T</u>	55%
<u>S</u>	.2	<u>U</u>	.9



19. It is reported that 3 out of every 10 students at Oakwood are car riders. What percentage of Oakwood students are NOT car riders?  $10 - 3 = 7$

$$\frac{7}{10} \xrightarrow{\times 10} \frac{70}{100} = 70\%$$

20. Is a 30% sale with a 20% off coupon the same as taking 50% off of the price? Why or why not? (Hint: Think about an item that costs \$10.)

No, think about a \$10 item.

$$30\% \text{ of } 10 = 3 \quad 20\% \text{ of } 7 = 1.40$$

$$10 - 3 = 7 \quad 7 - 1.40 = \$5.60$$

$$50\% \text{ of } 10 = \$5$$

