

Percent Worksheet 01 - Problems based on 50 Percent

Answer on this paper. Answers only are required. **NO CALCULATORS!**

To find 50% of a number:	$\div 2$
To find 25% of a number:	$\div 2$, then $\div 2$ OR $\div 4$
To find $12\frac{1}{2}\%$ of a number:	$\div 2$, then $\div 2$, then $\div 2$ OR $\div 8$ OR $\div 2$, then $\div 4$
To find 75% of a number:	$\div 2$ (remember the answer), $\div 2$ again, add the 2 answers
and so on...	

- Find 50% of
 - \$20 _____
 - 6 books _____
 - 24 leopards _____
 - 800 kangaroos _____
 - \$7 000 _____
 - 72 DVDs _____
- Find 25% of
 - \$32 _____
 - 12 rabbits _____
 - 60 dogs _____
 - 48 blubbers _____
 - \$18 000 _____
 - 22 000 hectares _____
- Find $12\frac{1}{2}\%$ of
 - \$80 _____
 - 32 grams _____
 - 96 ferrets _____
 - \$4.00 _____
 - 6 m^2 _____
 - 20 mm _____
- Find 75% of
 - \$24 _____
 - 40 km^2 _____
 - 600 socks _____
 - 280 batteries _____
 - \$22 _____
 - 18 hectares _____
- K-Mart is having a 25% off sale. How much will you *save* if you buy:
 - a pen that normally costs \$10? _____
 - a shirt that normally costs \$50? _____
- K-Mart is having a 25% off sale. How much will you *pay* if you buy:
 - a pen that normally costs \$16? _____
 - a wallet that normally costs \$60? _____
- K-Mart is having a $\frac{1}{4}$ off sale. How much will you *save* if you buy:
 - a skirt that normally costs \$72? _____
 - a bike that normally costs \$420? _____
- K-Mart is having a $\frac{1}{4}$ off sale. How much will you *pay* if you buy:
 - a skirt that normally costs \$80? _____
 - a bike that normally costs \$440? _____
- The population of Yeppoon has increased by 25% since 1999. The population in 1999 was 12 000 people. What is the population now? _____
- The population of Dusty Creek has decreased by $12\frac{1}{2}\%$ since 1999. The population in 1999 was 120 people. What is the population now? _____

Mega Challenge!

- The population of Smithville was 2400 in 2001. In 2002 the population increased by 25%. In 2003 the population decreased by 25%. What was the population at the end of 2003? _____
- Find $12\frac{1}{2}\%$ of 25% of 50% of 1600 people. _____

Percent Worksheet 02 – Problems Based on 10%

Answer on this sheet Answers only are required. NO CALCULATOR!

To find 10% of a number:	$\div 10$
To find 20% of a number:	$\div 10$, then $\times 2$ OR $\div 5$
To find 30% of a number:	$\div 10$, then $\times 3$
and so on...	
To find 5% of a number:	$\div 10$, then $\div 2$
and so on...	

- Find 10% of
 - \$20 _____
 - 60 000 airplanes _____
 - 500 calculators _____
 - \$9000 _____
 - 60 blankets _____
 - 620 hamsters _____
- Find 20% of
 - \$50 _____
 - 90 tapes _____
 - 30 spoons _____
 - \$15 000 _____
 - 400 camels _____
 - 60 000 hectares _____
- Find 10% of
 - \$3.60 _____
 - 32 mm _____
 - 45 cm _____
 - 1.2 m² _____
 - 625 metres _____
 - 2.1 mm _____
- Find
 - 40% of 80 pigs _____
 - 110% of \$60 _____
 - 30% of 70 pins _____
 - 80% of 6 kg _____
 - 90% of \$50 _____
 - 20% of 3.6 mm _____
- Find 5% of
 - \$80 _____
 - 800 buttons _____
 - 60 horses _____
 - 240 kg _____
 - 120 speakers _____
 - 160 grams _____
- Find 5% of
 - \$70 _____
 - \$6.60 _____
 - 62 kg _____
 - \$6.50 _____
 - 61 kg _____
 - 820 chickens _____
- Find 15% of
 - \$60 _____
 - \$50 _____
 - 80 erasers _____
 - \$22 _____
 - 3000 mice _____
 - \$32 _____
- Find 100% of
 - \$40 _____
 - 48 roosters _____
 - 67 kangaroos _____
- Find 110% of
 - \$40 _____
 - 60 wallabies _____
 - 500 eggs _____
- Find 90% of
 - \$20 _____
 - 80 bats _____
 - 4500 eagles _____
- Find 120% of
 - \$50 _____
 - 200 sharks _____
 - 50 000 magpies _____
- Find
 - 150% of 80 flies _____
 - 120% of 40 pens _____
 - 130% of \$200 _____

Mega-Challenge!

- A salesman earns 2½% commission. He sells a car for \$30 000. What is his commission? _____

Percent Worksheet 03 – Percents Based on 1%

To find 1% of a number:	Divide by 100
To find 2% of a number:	Divide by 100, then multiply by 2
To find 3% of a number:	Divide by 100, then multiply by 3
and so on...	

Answer in your notebook. Answers only are required. NO CALCULATOR!

1. Find 1% of

a. \$2000 _____	b. 500 lizards _____	c. 350 tonnes _____
d. 220 metres _____	e. \$4500 _____	f. 14 000 ducks _____

2. Find 2% of

a. \$5000 _____	b. 1400 lions _____	c. 32 000 nuggets _____
d. \$50 000 _____	e. \$32 _____	f. \$71 _____

3. Find 1% of

a. \$15.60 _____	b. 35 cm _____	c. 56 kg _____
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4. Find

a. 3% of 800 tiles _____	b. 4% of 700 glasses _____	c. 6% of 2000 buttons _____
d. 8% of \$6000 _____	e. 2% of 400 razors _____	f. 9% of 30 km _____

5. Find 101% of

a. \$80 000 _____	b. 600 labels _____	c. 300 000 galahs _____
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6. Find 101% of

a. \$40 _____	b. 60 wallabies _____	c. 500 worms _____
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7. Find 99% of

a. \$2000 _____	b. 1800 shelves _____	c. 3500 pencils _____
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8. Find 103% of

a. \$50 _____	b. 200 sharks _____	c. 50 000 magpies _____
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8. Find ½% of

a. \$100 _____	b. \$50 000 _____	c. 48 kg _____
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9. Find

a. 104% of 600 eggs _____	b. 102% of \$650 _____	c. 106% of 1000 pens _____
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10. Find 17.3% of \$68.34 *without a calculator*, as follows: Working
 Find 1% of \$68.34 by dividing 68.34 by 100.
 Now multiply the answer by 17.3.

Mega-Challenge!

12. A salesman earns 1½% commission. He sells a car for \$40 000. What is his commission?

11. I start with \$1000. It increases by 10%. The new amount increases by 10%. The new amount increases by 10%. How much do I have now? _____

Percent Worksheet 04 – Problems Based on $33\frac{1}{3}\%$.

Answer on this sheet. Answers only are required. NO CALCULATORS!

To find $33\frac{1}{3}\%$ of a number:	Divide by 3
To find $66\frac{2}{3}\%$ of a number:	Divide by 3, then multiply by 2

- Find $33\frac{1}{3}\%$ of
 - \$3 _____
 - 300 marbles _____
 - 9 cats _____
 - \$12 000 _____
 - 18 giraffes _____
 - 24 DVDs _____
- Find $66\frac{2}{3}\%$ of
 - \$3 _____
 - 30 bulbs _____
 - 12 dogs _____
 - \$15 000 _____
 - 21 pins _____
 - \$60 000 _____
- Find $33\frac{1}{3}\%$ of
 - \$4.50 _____
 - 3.6 metres _____
 - 3.6 kg _____
 - 1.2 m² _____
 - \$12.30 _____
 - 2.1 mm _____
- Find $66\frac{2}{3}\%$ of
 - \$4.50 _____
 - 3.3 metres _____
 - 1.2 cm _____
 - \$15.60 _____
 - 4.5 tonnes _____
 - 0.9 hectares _____
- K-Mart is having a $33\frac{1}{3}\%$ off sale. How much will you *save* if you buy:
 - a pen that normally costs \$15? _____
 - a wallet that normally costs \$36? _____
- K-Mart is having a $33\frac{1}{3}\%$ off sale. How much will you *pay* if you buy:
 - a coat that normally costs \$60? _____
 - a fishing rod that normally costs \$45? _____
- K-Mart is having a $\frac{1}{3}$ off sale. How much will you *save* if you buy:
 - a skirt that normally costs \$54? _____
 - a bike that normally costs \$270? _____
- K-Mart is having a $\frac{1}{3}$ off sale. How much will you *pay* if you buy:
 - a pen that normally costs \$2.40? _____
 - a chair that normally costs \$21.90? _____
- The population of Yeppoon has increased by $33\frac{1}{3}\%$ since 1999. The population in 1999 was 9000 people. What is the population now? _____
- The population of Dusty Creek has decreased by $33\frac{1}{3}\%$ since 1999. The population in 1999 was 39 people. What is the population now? _____

Mega Challenge!

- The population of Smithville was 1800 in 2000. In 2001 the population increased by $33\frac{1}{3}\%$. In 2002 the population decreased by $33\frac{1}{3}\%$. What was the population at the end of 2002?
- Find $66\frac{2}{3}\%$ of $66\frac{2}{3}\%$ of $66\frac{2}{3}\%$ of 27 people. _____

Percent Worksheet 05 – Application of Percents

Calculators ARE allowed! Set out your work CLEARLY!

1. To advertise a new chocolate bar, a chocolate manufacturer advertises: 25% MORE FOR FREE! If the standard chocolate bar is 50 grams, what is the size of the new bar?
2. A crazy shopkeeper is selling paint on discount. He offers a 50% discount if you come into the shop wearing a purple shirt, and a further 50% discount if you can say 'In your dreams' backwards. A tin of paint originally costs \$64. How much does it cost if you get both discounts?
3. A baseball player had a hit in 35% of his times at bat. If he batted 400 times during a season, how many hits did he have?
4. A student scored 80% on a Maths test. If there were a total of 70 marks, how many marks did the student earn?
5. Mishimoto TV manufacturers claim the viewing area of their 59 cm TV screen is 5% larger than their nearest competitor. If their nearest competitor's screen has a viewing area of 1850 cm², what is the viewing area of the Mishimoto TV?
6. Food prices are expected to rise 3.2% in the next year. If this happens, how much will a basket of groceries that costs \$125 today cost in one year's time?
7. It is proposed that the Medicare Levy increase from 1½% of taxable income to 2¼% of taxable income. If your taxable income is \$70 000, how much extra would you have to pay?
8. A 3.5 kg roast shrinks by 15% when cooked. What is its weight after cooking?
9. To estimate the total cost of a house, some builders add 12% onto the construction costs for fees and charges. If the construction costs amount to \$135 000, estimate the total cost of a house.
10. You own 22% of a block of units. What is the value of your share if the units are valued at \$250 000?
11. You are making your own 'trail mix'. You like the mix to contain 25% peanuts, 40% sultanas and the rest dried fruit. How much of each ingredient if you want to make 3 kg of trail mix?
12. A boilermaker at the Stanwell power station was making a flange for the cooling tower from a sheet of mild steel. The sheet weighed 880 kg before cutting. There was a 15% wastage of steel when he cut the flange. How much did the flange weigh?
13. A chef buys a whole rump for a banquet.
 - a. The rump weighs 6 kg. 10% of it's weight is lost when it is trimmed. How much does it weigh after it is trimmed?
 - b. A further 20% of the weight is lost when it is cooked. How much does it weigh now (round to nearest 100g)?
 - c. About how many 300g portions can be served from the rump?
 - d. If the whole rump cost the chef \$5 per kilo, what is the cost of the meat for each portion?
14. In a world with 5 billion people:
 - 70% live in under-developed countries.
 - 55% don't have access to adequate medical facilities.Translate these percentages into actual numbers (rounded off sensibly).
15. John bought a car for \$20 000. He sold it for a 30% profit. He spent all the money from the sale on another car, which unfortunately he had to sell for a 30% loss. What was his overall profit or loss?

Answers 1. 62.5 grams 2. \$16 3. 140 hits 4. 56 marks 5. 1942.5 cm² 6. \$129 7. \$525 8. 2.975 kg 9. \$151 200

10. \$55 000 11. 0.75 kg peanuts, 1.2 kg sultanas, 1.05 kg dried fruit 12. 748 kg 13. a. 5.4 kg b. 4.3 kg c. 14 serves d. \$2.14 14. 3.5 billion; 2.75 billion 15. loss of \$1800