

Getting Ready for Finance

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Evaluating Expressions

Evaluate $6 - n$ when $n = 4$.

$$6 - n = 6 - 4 \quad \text{Substitute 4 for } n$$

$$= 2 \quad \text{Simplify}$$

Evaluate the expression.

1. $3 + x$ when $x = 13$

5. z^2 when $z = 2.5$

2. $y - 2$ when $y = 18$

6. b^3 when $b = 0.1$

3. $\frac{20}{k}$ when $k = 4$

7. $p^2 + m$ when $m = 2.75$ and $p = 0.5$

4. $40w$ when $w = 0.55$

8. $z(x + y)$ when $x = 1.2$, $y = 2.8$ and $z = 10$

9. $(6 + h^2 - j) \div 2$ when $h = 6$ and $j = 4$

10. $y - (z + z^2)$ when $y = 10$ and $z = 2$

Order of Operations

Parentheses	Exponents	Multiply or Divide	Add or Subtract
()	\sqrt{x} or x^2	\times or \div	$+$ or $-$

Evaluate $(5 + 3)^2 \div 2 \times 3$.

$$= (8)^2 \div 2 \times 3 \quad \text{Add within the parentheses}$$

$$= 64 \div 2 \times 3 \quad \text{Evaluate the power}$$

$$= 32 \times 3 \quad \text{Divide}$$

$$= 96 \quad \text{Multiply}$$

Evaluate the expression.

1. $12 - 6 \div 2$

4. $15 - (4 + 3^2)$

2. $1 + 2 \cdot 9^2$

5. $\frac{20-12}{5^2-1}$

3. $3 + 2^3 - 6 \div 2$

6. $50 - [7 + (3^2 \div 2)]$

7. $\frac{45}{8(5-4)-3}$

Evaluate the expression with $x = 4$.

10. $15x - 8$

8. $(8 + 5) \times \frac{35}{5} + 6$

11. $3x^2 + 4$

9. $9 \div 3 \times 2 - 6 + 2$

12. $2(x - 1)^2$

Converting Fractions, Decimals, and Percentages

Ex. 1 - Fraction to Decimal

$$\frac{3}{5} = 0.6$$

Ex. 3 - Percentage to Decimal

$$125\% = 1.25$$

Ex. 2 - Decimal to Percentage

$$0.384 = 38.4\%$$

Convert each number into a percentage.

1. 0.71

4. 0.085

2. 1.26

5. $\frac{2}{3}$

3. $\frac{2}{5}$

6. 2.00

Convert each number into a decimal.

7. $\frac{7}{10}$

10. 109%

8. 26%

11. $\frac{20}{5}$

9. 0.5%

12. 8%

Calculating Hourly and Overtime Pay

Overtime is defined as any hours worked beyond 40 per week; the pay rate increases to 1.5 times the regular hourly pay.

Ex - Ben works as a physicist assistant earning \$15/hr. He worked 43 hours last week. How much did Ben earn on his last paycheck?

$$\$15 \times 40 + (\$15 \times 1.5 \times 3) = \$667.5$$

Solve each problem; include units when necessary.

1. Pamela is a waitress at a diner and earned \$84 in 6 hours. How much money did she earn in 5 hours?
2. An employee worked 41.2 hours and makes \$10.82 per hour. How much money did the employee make? (Any time worked over 40 hours is considered overtime and 1.5 times the regular pay rate).
3. A person earned \$249.81 during a 40-hour week. What was the hourly wage?
4. Tom makes \$265.25 in 5 days. How much does he make in 4 days?

5. Jori worked 48 hours last week and earned \$817.44 on her paycheck. Find her hourly pay rate if she worked 8 hours of overtime (paid at 1.5 times the regular pay rate).

7. Frank earns \$65,000 annually as a gym teacher. What is his biweekly salary?

6. Dave wants to make \$500 every week at his new job to save up for a new motorcycle. If he is making \$13/hr, how many hours a week will he need to work in order to meet his goal?

Business Costs and Overhead

Businesses often pay for costs outside of payroll; these costs can include rental fees, utilities, third party company services, etc.

Ex - Angela's pet grooming business needs to rent two carpet cleaning machines and hire a window power washer for the building's exterior. The Clean Bros. rents each machine for \$75 per day, and the power washing will cost \$30 for materials and \$90 for labor. How much will it cost Angela?

$$(2 \times \$75) + (\$30 + \$90) = \$270$$

Solve each problem; include units when necessary.

1. BT&T charges \$0.35 for the first minute and \$0.19 for each additional minute for a long distance call. How much will a 15 minute long-distance call cost?
2. A car rental company charges \$19 per day and \$0.48 per mile to rent a car. What is the total bill if a car is rented for 4 days and is driven 142 miles?
3. A janitorial service cleans offices, charging \$0.42 per square foot. If the office area measures 300 feet by 75 feet, what is the charge to clean this office?

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5. Thompson's Concrete offers equipment for daily rentals. Per day, they charge \$55 for a power trowel, \$75 for a mixer, and \$55 for a laser level. There is a flat fee of \$120 for delivery and pickup. How much will it cost to rent the equipment for three days?

6. The Ratatouille rents a 40-foot by 50-foot area at the mall. The restaurant pays \$10 per square foot per year for rent, plus an additional fee of 2% of their gross sales. Last year The Ratatouille had \$400,000 in gross sales. How much did they pay in rent for the year?

Social Security, Medicare, and Sales Taxes

Social Security and Medicare are two types of taxes taken out of paychecks regardless of withholding status. Sales tax is paid on non-raw food items.

Ex. 1 - Kevin earns \$415 each week at his painting job over the summer. Social Security and Medicare take 8% of his pay. How much is deducted for Social Security and Medicare? How much does Kevin get to keep?

$$\$415 \times 0.08 = \$33.20 \text{ in taxes paid}$$

$$\$415 - \$33.20 = \$381.80$$

Kevin gets to keep \$381.80 of his paycheck.

Solve each problem; include units when necessary.

1. Betty earns \$340 per week and has 25% of this amount withheld for taxes, Social Security and Medicare. Find the amount withheld.
2. The sales tax rate in New York City is 8.8%. Find the tax charged on a purchase of \$219 and the total cost.
3. The sales tax rate in one state is 5.5%. How much tax will be charged on a purchase of 9 chairs at \$47 apiece? Round your answer to the nearest cent

4. One fifth of Mary's earned income is deducted from her check for withholdings (taxes, retirement, etc). Three fourths of the withholdings are for taxes. What fraction of Mary's earned income is deducted for taxes?
5. The following table shows the earnings for the Jones family last year. If the family paid 9% of their total income in taxes for the year, how much was paid in taxes?

Month	Earnings	Month	Earnings
Jan.	\$1400	July	\$1300
Feb.	\$1150	Aug.	\$2450
Mar.	\$2950	Sept.	\$2500
Apr.	\$2300	Oct.	\$2000
May	\$1650	Nov.	\$2350
June	\$2700	Dec.	\$2400