

Standard: MAMDM.A.3b. Determine, represent, and analyze mathematical models for income, expenditures, and various types of loans and investments.

EQ: How can I calculate gross income based on my career choice? net income?

How much do you expect to earn in 10 years
as someone who has a:

High school diploma?

Bachelor Degree?

Master's Degree?

Doctorate Degree?

FIGURE 1.7A
Median Earnings of Full-Time Year-Round Workers by Age and Education Level, 2009–2011

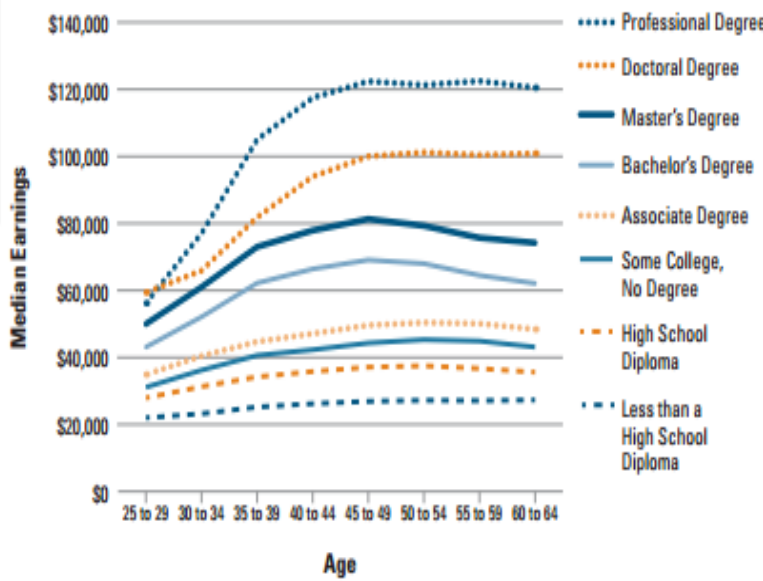
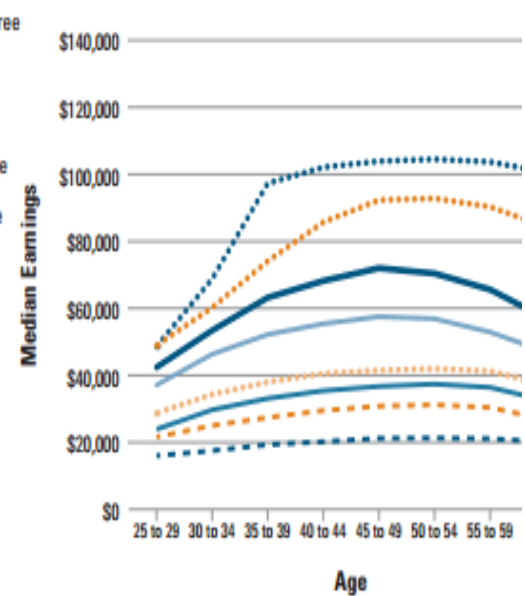


FIGURE 1.7B
Median Earnings of All Workers by Age and Education Level, 2009–2011



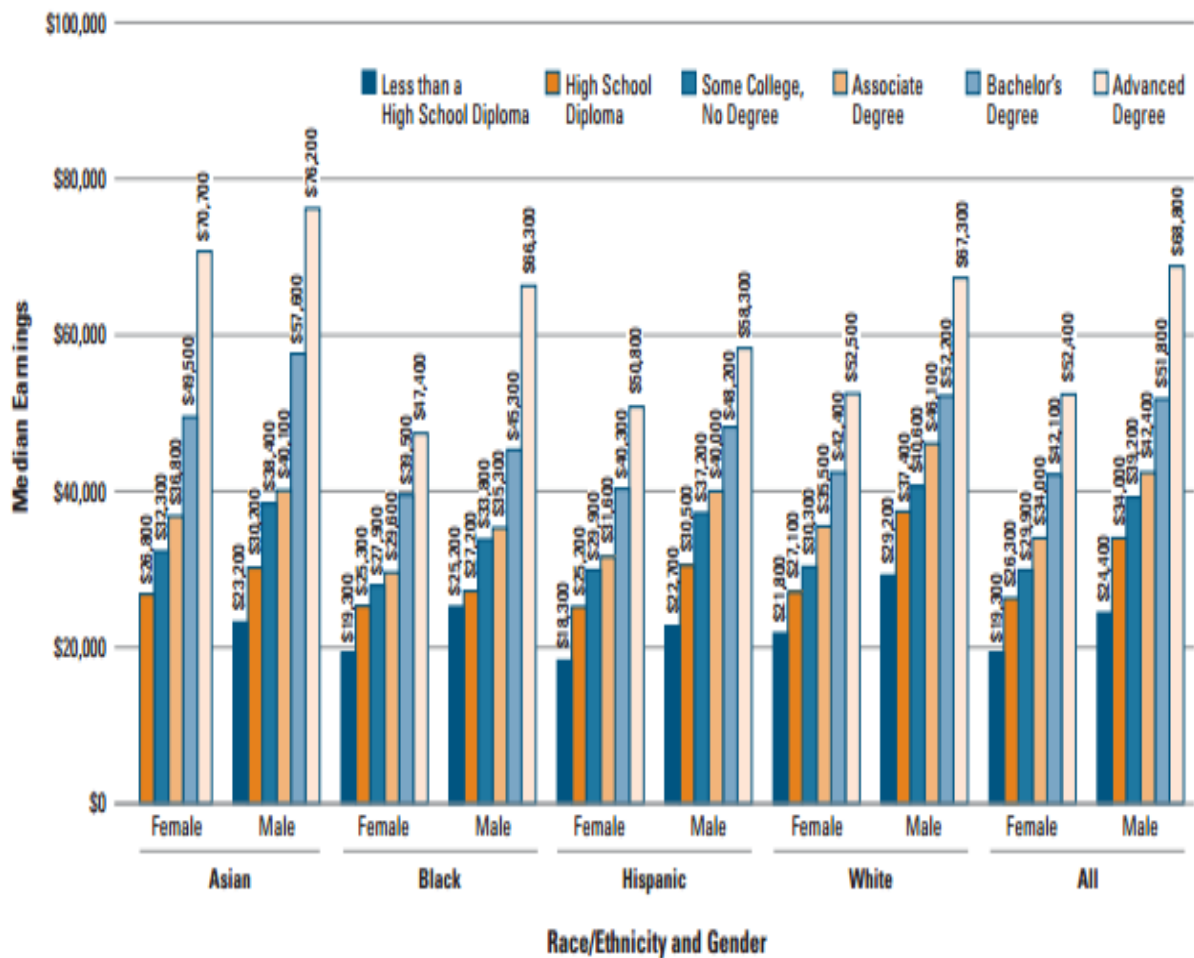
Age	Full-Time Year-Round Workers								All Workers							
	Less than a High School Diploma	High School Diploma	Some College, No Degree	Associate Degree	Bachelor's Degree	Master's Degree	Doctoral Degree	Professional Degree	Less than a High School Diploma	High School Diploma	Some College, No Degree	Associate Degree	Bachelor's Degree	Master's Degree	Doctoral Degree	
25 to 29	\$22,000	\$27,900	\$31,100	\$34,900	\$43,100	\$50,000	\$59,400	\$56,200	\$16,000	\$21,600	\$23,900	\$28,700	\$37,100	\$42,400	\$48,900	
45 to 49	\$26,900	\$37,100	\$44,300	\$49,600	\$69,100	\$81,300	\$100,000	\$122,400	\$21,200	\$30,800	\$36,700	\$41,500	\$57,500	\$72,000	\$92,300	
60 to 64	\$27,300	\$35,600	\$43,100	\$48,400	\$62,100	\$74,200	\$100,900	\$120,500	\$20,100	\$26,800	\$32,500	\$37,000	\$47,000	\$57,000	\$84,300	

NOTE: Based on the 2009–2011 American Community Survey three-year combined data file. Earnings in 2009 and 2010 are adjusted to 2011 dollars using the Consumer Price Index for all urban consumers. Median earnings are the median of combined data.

SOURCES: U.S. Census Bureau, 2012f; calculations by the authors.

FIGURE 1.4

Median Earnings (in 2011 Dollars) of Full-Time Year-Round Workers Ages 25–34, by Race/Ethnicity, Gender, and Education Level, 2009–2011



TE: Based on combined data from the 2010, 2011, and 2012 Annual Social and Economic Supplement of the Current Population Survey. Earnings in 2009

Vocabulary-

Income: money earned from working, investments, or doing business.

Bi- weekly: 26 times per year; every 2 weeks

Monthly- 1 time per month

Semi- monthly: 24 times per year

Typical work day/shift: 8 hours

Typical work week: 40 hours

Yearly: days- 365 weeks- 52

Gross income: income earned before any deductions.

Net income: income earned after any deductions; take home pay

Deductions: a percentage of your paycheck that is taken out (deducted) from your gross earnings

Salary: a fixed regular payment made by an employer to an employee

Examples:

- 2) Cherish is paid bi-weekly. Her annual salary is \$37, 000. What is her bi-weekly salary?

$$37000/26= \$1423.08$$

- 3) Maureen works at Burger World. Her hourly wage is \$9.70. If she works 40 hrs. per week, what is her regular weekly pay? Yearly pay?

$$9.70 \times 40 = \$388$$

- 4) Janet makes \$10 per hour. During the month of July, she gets a one- week bonus. If Janet works a typical work week, how much will her annual salary be?

$$10 \times 40 \times 52 = \$20800$$

$$20800 + 400 = \$21200$$

- 5) Sally makes a gross annual salary of \$47, 000. If Sally is paid weekly, what should the gross amount of her weekly paycheck be?

$$47000/52 = \$903.85$$

- 6) Justin earns \$2, 140 each month at his job. How much does Justin make an hour?

$$2140 \times 12 = \$25680$$

$$25680/52 = \$493.85$$

$$493.85/40 = \$12.35$$



Gross vs Net Income



Example 7: Augustin works as a college professor at a community college. If his wage is \$29.54 per hour, answer the following:

a) How much does Augustin earn in a typical work week?

$$29.54 \times 40 = \$1181.60$$

b) What is Augustin's monthly gross earnings?

$$1181.60 \times 52 = \$61443.20 / 12 = \$5120.27$$

c) What is Augustin's annual gross salary?

$$\$61443.20$$

Determining Post-Tax (Net) Income

Steps:

1. Determine monthly income
2. Calculate taxes (based on percentages)
3. Calculate deductions (benefits)
4. Deduct taxes and benefits from income





Gross vs Net Income



Example 7a: Augustin wants to join his friends on a Weekend at the end of the month!! Each person is responsible for their own transportation, lodging and food. The following deductions are applied to his paycheck:

Federal taxes	20.8%	$5120.27 \times 0.208 = \$1065.02$
State taxes	5.7%	$5120.27 \times 0.057 = \$291.86$
Social Security	3.2%	$5120.27 \times 0.032 = \$163.85$
Retirement	3.25%	$5120.27 \times 0.0325 = \166.41
Medical insurance	\$132.21 (monthly)	\$132.21
Dental insurance	\$ 65.37	\$65.37

\$1884.72

What is Augustin's net pay for the month?

Gross monthly- \$5120.27

Deduction- \$1884.72

Net pay= $5120.27 - 1884.72 = \$3235.55$

Your Turn...

Example 8:

You earned \$2,500 for this pay period. You pay the following taxes:

12% federal taxes --- \$300

6.7% state taxes----- \$167.50

3.2% social security taxes --- \$80

Medical insurance \$78 (monthly) -- \$78

Retirement 4.5% ---- \$112.50

Deduction:----- \$1008.50

How much is your net income?

$$\$2500 - \$1008.50 = \$1491.50$$

Example 9:

You're considering an offer as Director of Marketing and you would earn 12.5% more than your current job. You currently work for a company that pays you \$35.55 per hour with two week bonus every December. Answer the following:

1. How much do you earn annually at your current job? **\$73,944**
2. How much do you earn monthly at your current job? **\$6162**
3. What would you earn annually as the Director of Marketing? **\$83,187**
4. Monthly as Director of Marketing? **\$6932.25**



Which offer is better?



Example 9a: You're considering three positions: Marketing executive earns \$43,000 annually, Paralegal earns \$22.00 hourly, and Car Salesman earns 5% of \$125,000 projected sales.

Determine the annual income-

Paralegal	Marketing Executive	Car Salesman

And this one...

Example 9b

Determine the Post-Tax income of the Marketing Executive if he has the following deductions:

Taxes: Federal 13%, State 4%, Social Security 6.4%, Medicare 1.45%

Deductions: Retirement contribution- 5% of pre-tax monthly income

Health Insurance - \$60 monthly

Life insurance - \$40 monthly

Here's another one...

Find the post-tax (net) monthly income for the Car Salesman using the same deduction criteria

Taxes: Federal 13%, State 4%, Social Security 6.4%, Medicare 1.45%
Deductions: Retirement contribution- 5% of pre-tax monthly income
Health Insurance - \$60 monthly
Life insurance - \$40 monthly

Steps:

1. Determine monthly income
2. Calculate taxes (based on percentages)
3. Calculate deductions (benefits)
4. Deduct taxes and benefits from income



