Name _____

AWM Math 11 – Unit 3 – Practice Test
Investing and Borrowing Money

Section A – Multiple Choice

Choose the best response for each of the following questions. Circle that response.

1) Paul invests his savings of $1835.00 into a savings bond at a simple interest rate of 3.80% per annum (per year). How much interest will this earn in 4 years?

a) $278.92
b) $334.70
c) $223.14
d) $264.25

2) Mike earned $67.00 in simple interest on an investment $2800 after 9 months. What is the interest rate?

a) 7.6%
b) 4.5%
c) 2.8%
d) 3.2%

3) If you invest $23 010.00 at an interest rate of 2.90% per annum compounded semi-annually, what will the total value of your investment be after 9 years?

a) $29801.62
b) $29816.29
c) $23853.03
d) $35779.54

4) If you invest $300.00 at a rate of 13.50% per annum compounded quarterly, how much ***interest*** will you earn after 5 years?

a) $282.68
b) $638.74
c) $202.50
d) $582.68

5) How many years must $2820.00 be invested at an interest rate of 3.10% per year in order to earn $420.00 in interest?

a) 2.4 years
b) 4.8 years
c) 5.2 years
d) 8.4 years

6) A local bank offers an investment option with a simple interest rate of 3.60% per year. If you invest $3200.00, how much ***in total*** will your investment be worth in 4 years?

a) $460.80
b) $3660.80
c) $4608.00
d) $46 080.00

7) On July 18, Stephanie purchases a ticket for a cruise vacation for $2800.00 on her credit card. She is charged interest starting on the day of her purchase. If the credit card charges 17.50% interest annually, how much interest will Stephanie owe on the cruise on October 2? (July and August have 31 days while September has 30 days)

a) $99.81
b) $110.07
c) $108.97
d) $103.37

8) Chantal has an outstanding balance of $256.84 on a credit card. The minimum monthly payment is 13% or $20.00, whichever is more. What is the minimum monthly payment?

a) $16.00
b) $33.39
c) $20.00
d) $38.39

9) Using the Rule of 72, approximately how long would it take for an investment to double in value at a rate of 6.6% per annum, compounded annually?

a) 10.91 years
b) 4.75 years
c) 8.73 years
d) 13.09 years

10) What is a finance charge?

a) The total amount of interest paid to borrow a sum of money.
b) The charge for using an ATM to get a cash advance on your credit card.
c) The monthly payment to a credit card agent for an unpaid balance.
d) The tax paid on any purchase made with a credit card.

11) The minimum monthly payment for Hasan's credit card is 6% of the unpaid balance. Hasan pays the minimum of $91.68. What is his unpaid balance?

a) $1178.00
b) $1408.00
c) $1528.00
d) $1928.00

12) If 25 days after a $640.00 loan is charged, it costs $850.00 to pay it off, what is the simple daily interest rate?

a) 2.11%
b) 2.71%
c) 1.01%
d) 1.31%

13) A credit card holder with an unpaid balance of $2735.00 must make a minimum payment of $105.80. What percentage of the balance is the minimum payment?

a) 2.9%
b) 3.9%
c) 4.9%
d) 5.9%

14) Martin was trying to find out how much interest his investment had earned. He used the simple interest formula $I = (670) \times (0.05) \times (14 \div 52)$. He left the investment in the account for

a) 14 days
b) 14 weeks
c) 14 months
d) 14 years

Section B – Short Answer

Answer the following questions, showing ALL steps and work for full marks.

1) An investment earns interest at a simple interest rate of 1.10% per annum. If you invest $4800.00, how much interest will you earn in 3 years?

2) How long would it take a compounded investment of $1200 to grow to $2400 if the interest rate it is invested at is 6.0% per year?

3) If you have $9425.00 to invest, what is the value of the investment at the end of 4 years if it is compounded weekly at an interest rate of 2.75%?

4) A principal of $3500.00 was invested at a simple interest rate of 1.50% per annum. It earned $157.50 in simple interest. How many years was it invested for?

5) Jackson took out a payday loan for $710.00. The payday loan store required Jackson to give a post-dated cheque for $790.00, dated for 7 days from the date the loan was given.

a) What is the finance charge on this loan?

b) What is the annual rate of interest for this loan? Assume simple interest.

6) Blair takes out a $7300.00 loan and is offered the following two choices for repayment.

a) Use the *Loan Payment Calculator* below to calculate the monthly payment and total cost of each loan option.

Loan Payment Calculator: Monthly payment per $1000.00 borrowed (interest compounded monthly)			
Interest rate (%)	**Term (in years)**		
	1	**2**	**3**
5.50	85.84	44.10	30.20
5.75	85.95	44.21	30.31
6.00	86.07	44.32	30.42
6.25	86.18	44.43	30.54
6.50	86.30	44.55	30.65
6.75	86.41	44.66	30.76
7.00	86.53	44.77	30.88

Option 1:
5.75% per year for 3 years

Option 2:
7% per year for 2 years

b) Which loan would you recommend Blair choose? Explain your answer.

_____

_____

7) Darcy is buying a new couch. She has three payment options.

- Option 1: Pay cash. The couch costs $900.00 plus 11% sales tax.
- Option 2: Pay with a credit card. The card charges 20% annual interest and Darcy expects to pay off the charge in 90 days (no taxes).
- Option 3: A store promotion of 12 monthly payments of $100.00 (no taxes).

a) Calculate the cost of each option

b) Which payment option do you recommend she choose? Explain your answer.

_____

_____

_____

SIMPLE INTEREST

$I = P \times r \times t$

I = Interest
P = Principal (amount of money that was originally borrowed or invested)
r = Rate (interest rate – in decimal form)
t = Time (in years)

Ex. 2 years = 2
15 weeks = 15 ÷ 52
145 days = 145 ÷ 365
3 months = 3 ÷ 12

Other versions of this formula to use when finding rate, time, or principal:

$r = I \div (P \times t) \times 100$

$t = I \div (P \times r)$

$P = I \div (r \times t)$

COMPOUND INTEREST

$A = P \times (1 + r \div n)^{n \times t}$

A = Final amount (principal + interest)
P = Principal (amount of money that was originally borrowed or invested)
r = Rate (interest rate – in decimal form)
t = Time (in years)
n = Number of times interest is compounded in a year

Annually = 1	Monthly = 12
Semi-annually = 2	Weekly = 52
Quarterly = 4	Daily = 365

PERSONAL LOAN CALCULATOR: MONTHLY PAYMENT PER 1000.00 BORROWED (INTEREST COMPOUNDED MONTHLY)					
Interest rate (%)	*Term in years*				
	1	***2***	***3***	***4***	***5***
3.00	84.69	42.98	29.08	22.13	17.97
3.25	84.81	43.09	29.19	22.24	18.08
3.50	84.92	43.20	29.30	22.36	18.19
3.75	85.04	43.31	29.41	22.47	18.30
4.00	85.15	43.42	29.52	22.58	18.42
4.25	85.26	43.54	29.64	22.69	18.53
4.50	85.38	43.65	29.75	22.80	18.64
4.75	85.49	43.76	29.86	22.92	18.76
5.00	85.61	43.87	29.97	23.03	18.87
5.25	85.72	43.98	30.08	23.14	18.99
5.50	85.84	44.10	30.20	23.26	19.10
5.75	85.95	44.21	30.31	23.37	19.22
6.00	86.07	44.32	30.42	23.49	19.33
6.25	86.18	44.43	30.54	23.60	19.45
6.50	86.30	44.55	30.65	23.71	19.57
6.75	86.41	44.66	30.76	23.83	19.68
7.00	86.53	44.77	30.88	23.95	19.80
7.25	86.64	44.89	30.99	24.06	19.92
7.50	86.76	45.00	31.11	24.18	20.04
7.75	86.87	45.11	31.22	24.29	20.16
8.00	86.99	45.23	31.34	24.41	20.28
8.25	87.10	45.34	31.45	24.53	20.40
8.50	87.22	45.46	31.57	24.65	20.52
8.75	87.34	45.57	31.68	24.77	20.64
9.00	87.45	45.68	31.80	24.89	20.76
9.25	87.57	45.80	31.92	25.00	20.88
9.50	87.68	45.91	32.03	25.12	21.00
9.75	87.80	46.03	32.15	25.24	21.12
10.00	87.92	46.14	32.27	25.36	21.25