Name: _____ Class: _____	SCORE: / 22
Baldivis Secondary College	**Year 12 Essential Mathematics Unit 2** **Mini Test 8 2018** **Topic – Interest** ***Full working out MUST be shown to get full marks for each question.***
Total Time:	30 minutes
Weighting:	5%
Equipment:	To be provided by the student: Pen, pencil, ruler, scientific calculator, 1 single sided page of A4 notes

1. **Find the simple interest on the following amounts** **[2 + 2 = 4 Marks]**
   a. *$4500 at 10% for 5 years*

$4500 × 0.1 × 5 ✓

= $2250 ✓

   b. *12,000 at 7.5% for 2.5 years*

12000 × 0.075 × 2.5 ✓

$2250 ✓

2. **Find the missing variable in the following equations:** **[2 + 2 + 2 = 6 Marks]**
   a. *Sam earned $55 simple interest at 2% for 5 years, how much was the principle amount?*

$55 ✓ ✓ / (2% × 5) = $550

   b. *Shaun earned $1485 from a principle of $4500 across 3 years. What was the simple interest rate?*

1485 ✓ ✓ / (4500 × 3) = 0.11 → 11% ✓

   c. *Shauna earned $675 on a principle of $1,500 at 7.5% simple interest across some years. What was the number of years?*

675 ✓ ✓ / (1500 × 0.075) = 6 years

3. **Madeline invests in a compound interest fund at 8.5%, compounding once per year, for 15 years. She puts $8,000 in as principle. What is the value of the account after 15 years?** **[3 Marks]**

$8000\left(1+\frac{0.085}{1}\right)^{15}$ ✓

$=\$27197.94$ ✓

4. **Madeline finds another account with the same interest rate, but compounds twice per year. She puts another $8000 in for 15 years.** **[3 + 1 = 4 marks]**

   a. *How much does she make after 15 years?*

$8000\left(1+\frac{0.085}{2}\right)^{15\times 2}$

$=\$27885.08$ ✓

   b. *Comparing your answer with question 3, which account is better.*

Account 2 ✓

5. **Alex buys a work ute for $55,990 that she depreciates once a year for 5 years at 11%.** **[2 + 3 = 5 marks]**

   a. *How much would Alex lose after one year?*

$55990\times 0.11 = \$6158.9$ ✓

   b. *How much would she lose after the 5 years?*

$55990\times\left(1-\frac{0.11}{1}\right)^{5}$ ✓

$=31265.15$ ✓

$55990 - 31265.15$ ✓

$\$24724.85$ ✓

END OF ASSESSMENT