Math 099 - Quiz 8

November 5, 2018

Name __key__

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4 points) Do the following problems WITHOUT using your calculator.

    (a) Explain how to find 10% of 18 without actually multiplying to compute it.

    MOVE THE DECIMAL POINT ONE PLACE : 10.% OF 18 IS $\boxed{1.8}$

    (b) Explain how to get 20% of 18 by using your result from part (a).

    DOUBLE 10% TO GET 20% : 20% OF 18 IS $\boxed{3.6}$

    (c) Explain how to get 5% of 18 by using your result from part (a).

    . 5% IS HALF OF 10% : 5% OF 18 IS $\boxed{0.9}$

    (d) Explain how to get 15% of 18 by using your results from parts (a) and (c).

    15% = 5% + 10% : 15% OF 18 IS

    $0.9 + 1.8 = \boxed{2.7}$

2. (6 points) You may use your calculator for the next problems.

    (a) How much time is required to double an investment at 8% simple interest?

    $P = P(0.08)t \Rightarrow 1 = 0.08t \Rightarrow t = \frac{1}{0.08} = \boxed{12.5 \text{ yrs}}$

    (b) How much time is required to double an investment at 8% compounded monthly?
    Use guess and check.

    $2P = P\left(1 + \frac{0.08}{12}\right)^{12t}$

    $\Downarrow$

    $2 = \left(1 + \frac{0.08}{12}\right)^{12t}$

t	$\left(1 + \frac{0.08}{12}\right)^{12t}$
8	1.8925
9	2.0495
8.7	2.00108

    CLOSE ENOUGH!

    ABOUT 8.7 yrs.