MONDAY, SEPTEMBER 24, 2012

TISK Problems

1) Convert to a fraction and a percent: $0.\overline{4}$
2) Write and solve an equation:
   Jordyn has eleven more than twice as many starts in volleyball as Sedona. If Jordyn has 21 starts, how many does Sedona have?
3) Multiply: $\frac{21}{5}\left(-\frac{20}{9}\right)$

We'll have 3 Mental Math questions today.

Homework: p. 430-431 #17-19
OPTIONAL: p. 439-440 #17-32

Receive Graded Work

- Points Earned/Points Possible
  - Homework: either 5 or 1 point per letter
    - H: Heading is correct/complete
    - P: Problems Copied
    - W: Work shown
    - A: Answers Indicated
    - C: Completed all problems
  - Quiz: Divide your percent by 2.

Homework Check

- p. 426 #9-15
- 9) $330
- 10) $7.84
- 11) $2.16
- 12) $38.07
- 13) $1963.75
- 14) $81,200
- 15) She should choose $2800 plus 3% of sales.

§8-7 More Applications of Percents

- Another application of percents is ***interest rates*.**
- There are many types of interest rates.
- The one we will focus on is Simple Interest.
- The formula for simple interest is:

$$I = P \cdot r \cdot t$$

Amount of Interest	Amount of Principle	interest rate	time in years

Example

- McKenna's parents deposited $100 in a savings account on her first birthday.
- The account has an interest rate of 5.4%.
- How much money had she earned in interest on her 10th birthday?

$I = ?$

$P = 100$

$r = 5.4\%$

$t = 9$ years

$$I = P \cdot r \cdot t$$

$$I = 100(0.054)9$$

$$I = (5.4)\,9 = 48.6$$

On her 10th birthday, she will have earned $48.60.

Example

- Avery has $1000 to put in a savings account. She wants to double her money in 3 years. What interest rate will she need to have in order to do so?

$\mathrm{I} = 1000$

$\mathrm{P} = 1000$

$r = ?$

$t = 3$ years

$$\mathrm{I} = \mathrm{P} \cdot r \cdot t$$

$$1000 = 1000(r)3$$

$$\frac{1000}{3000} = \frac{3000r}{3000}$$

$$r = \frac{1}{3} = 33\frac{1}{3}\%$$

Avery needs a $33\frac{1}{3}\%$ interest rate.

Example

- Jessie wants to save a total of $5000. If she has $750 to put in her savings account that earns an 8% interest rate, how many years will it take her to save up to her goal?

$\mathrm{I} = 4250$

$\mathrm{P} = 750$

$r = 0.08$

$t = ?$

$$\mathrm{I} = \mathrm{P} \cdot r \cdot t$$

$$4250 = 750(0.08)\,t$$

$$\frac{4250}{60} = \frac{60}{60}t$$

$$t = \frac{425}{6} = 70 \text{ years and } 10 \text{ months}$$

Check Point

- Alex's parents deposit $500 in a savings account on his second birthday. The savings account has an 8% interest rate. How much money will he have in the account on his 16th birthday?

$I = ?$
$P = 500$
$r = 0.08$
$t = 14$

$I = Prt$

$I = 500(0.08)(14)$

$I = 560$

$500 \times 0.08 = 40.00$

$40 \times 14 = 160 + 400 = 560$

Total Savings $= I + P = 560 + 500$

He will have $1,060.

Check Point

- Vanessa has $400 to put in a savings account. She wants to triple her money in 5 years. What interest rate will she need to receive in order to do so?

$I = 800$

$P = 400$

$r = ?$

$t = 5$

$I = P \cdot r \cdot t$

$800 = 400(r)5$

$\frac{800}{2000} = \frac{2000}{2000} r$

$\frac{8}{20} = r$

$\frac{8 \times 5}{20 \times 5} = \frac{40}{100}$

She needs to get a 40% rate.

Check Point

- Adrian wants to save a total of $15,000. He has a savings account that has a simple interest rate of 15%. He deposits $5,000 to start the account. How many years will it take to save up to his goal?

$I = 15000 - 5000 = 10{,}000$

$P = 5000$

$r = 0.15$

$t = ?$

$I = P \cdot r \cdot t$

$10{,}000 = 5{,}000(.15)t$

$\frac{10{,}000}{750} = \frac{750t}{750}$

$13\frac{1}{3} = t$

$\frac{1}{3}$ year $= 4$ months

5000×0.15

$25\,000 + 50000$

750.00

$75 \overline{)1000}$ → $13\frac{1}{3}$, remainders -75, 250, -225, 25

He must save for 13 years and 4 months.

Homework

- p. 430-431 #17-19
- OPTIONAL: p. 439-440 #17-32