

Problem 5: $(22)(.15) = 3.30$ $\$22 + \$3.30 = \boxed{\$25.30}$

Example 5: $(12)(.08) = .96$ $12 + .96 = \boxed{\$12.96}$

OR $(12)(1.08) = \boxed{\$12.96}$

Exploration 1: a) $(100)(1.3) = \boxed{\$130}$

↑
100% + 30%

b) $(130)(.3) = 39$ $130 - 39 = \boxed{\$91}$ which is a loss

Example 6: $(.8)(x) = 20$ $x = \frac{20}{.8} = \boxed{25 \text{ students}}$

OR $\frac{80}{100} = \frac{20}{x} \rightarrow x \frac{4}{5} = \frac{20}{x} x \rightarrow 5 \cdot \frac{4x}{5} = 20 \cdot 5$

$\frac{4x}{4} = \frac{100}{4} \rightarrow x = \boxed{25 \text{ students}}$

Problem 6: a) $100 - (100)(.2) = \boxed{\$80}$

↑
20

$80 - (80)(.4) = 80 - 32 = \boxed{\$48}$

b) $100 - (100)(.4) = \boxed{\$60}$

↑
40

$60 - (60)(.2) = \boxed{\$48}$

↑
12

c) The cost of 40% off then 20% off is the same as 20% then 40%.

Problem 7: $x \frac{140}{100} = \frac{56}{x} x$ $\frac{x(1.4)}{1.4} = \frac{56}{1.4}$ $x = \boxed{\$40}$

Exploration 2:

Cost	\$ 15	\$ 100	\$ 120	\$ 150
Pascal	\$ 12.75	\$ 85	\$ 102	\$ 127.50
Euclid	\$ 12.83	\$ 72.68	\$ 102.60	\$ 128.25
Fibonacci	\$ 0	\$ 85	\$ 105	\$ 135

Pascal: $(15)(.85) = \$12.75$

$(100)(.85) = \$85$

$(120)(.85) = \$102$

$(150)(.85) = \$127.5$

Euclid: $(15)(.95)(.9) = \$12.83$

$(85)(.95)(.9) = \$72.68$

$(120)(.95)(.9) = \$102.60$

$(150)(.95)(.9) = \$128.25$

Shop at all 3 stores for different items to get the best deals. Choose the store where prices are lowest. (students may say that time & cost of gas are also factors to consider in the price)

Example 7: a) Joel: $75(.4) = \$30$
 Marvin: $[75(.75)](.6) = \$33.75$ ← (.4 is the remaining cost)

Joel's discount is $75 - 30 = \$45$
 Marvin's discount is $75 - 33.75 = \$41.25$ } discounts

b) Joel has the lower price. $30 < 33.75$

Problem 9:

Item	Fermat Market	Euclidmart
\$100	$100 - 50 = \$50$	$(100)(.9) = \$90$
\$200	\$150	\$180
\$400	\$350	\$360
\$500	\$450	\$450
\$600	\$550	\$540

1) Fermat Market is a better deal for items costing less than \$500 originally.

Euclidmart is a better deal for items costing more than \$500 originally

2) \$480 is less than \$500, so Fermat Market

$$\text{or } 480 - 50 = \$430 \quad 430 < 432$$

$$(480)(.9) = \$432$$

3) \$563 is more than \$500, so Euclidmart.

$$\text{or } 563 - 50 = \$513 \quad 513 > 506.9$$

$$(563)(.9) = \$506.70$$

Practice Problems: 1) a) $(.15)(80) = \boxed{12}$ b) $(.05)(175) = \boxed{8.75}$

c) $(.08)(14.55) = \boxed{1.164}$ d) $(.06)(32) = \boxed{1.92}$

2) Total: $4+6+2+5+1=18$ bracelets

Yellow: $\frac{2}{18} = .\overline{11} = \boxed{11.1\%}$

Blue: $\frac{6}{18} = .\overline{33} = \boxed{33.3\%}$

3) discount of \$5 on a \$80 pair of shoes

$\frac{5}{80} = .0625 = \boxed{6.25\%}$ discount

4) $35 + (.24)(35) = 35 + 8.4 = \43.40

or
 $(1.24)(35) = \boxed{\$43.40}$

5) cost of sale: $\frac{\$2400}{1.05} = \frac{1.05x}{1.05}$

store's cost:
 $x = 2285.71$

profit: $2400 - 2285.71 = \boxed{\$114.29}$ gain

cost of sale 2: $\frac{\$2400}{.95} = \frac{.95x}{.95}$

store's cost:
 $x = 2526.32$

loss: $2526.32 - 2400 = \boxed{\$126.32}$ loss