Adding/Subtracting Integers

Find each sum.

1) $(-12) + 7$ $= -12 + 7$
$= \boxed{-5}$

2) $(-10) + (-7) = -10 - 7$
$= \boxed{-17}$

3) $(-6) + 12 = -6 + 12$
$= \boxed{6}$

4) $8 + 7 = \boxed{15}$

5) $3 + 4 = \boxed{7}$

6) $(-45) + 9 = -45 + 9$
$= \boxed{-36}$

7) $(-1) + (-46) = -1 - 46$
$= \boxed{-47}$

8) $(-30) + 10 = -30 + 10$
$= \boxed{-20}$

9) $(-34) + 50 = -34 + 50$
$= \boxed{16}$

10) $38 + (-5) = 38 - 5$
$= \boxed{33}$

Find each difference.

11) $2 - (-2) = 2 + 2$
$= \boxed{4}$

12) $(-1) - 10 = -1 - 10$
$= -11$

13) $8 - 7 = \boxed{1}$

14) $(-8) - (-6) = -8 + 6$
$= -2$

15) $11 - 4 = \boxed{7}$

16) $48 - (-31) = 48 + 31$
$= \boxed{79}$

17) $18 - 41 = \boxed{-23}$

18) $(-38) - 30 = -38 - 30$
$= -68$

19) $(-1) - (-3) = -1 + 3$
$= \boxed{2}$

20) $(-1) - (-40)$
$= -1 + 40$
$= \boxed{39}$

Evaluate each expression.

21) $(-10) - 47 = -10 - 47$
$= \boxed{-57}$

22) $(-29) - 29 = -29 - 29$
$= \boxed{-58}$

23) $13 + (-29) = 13 - 29$
$= \boxed{-16}$

24) $38 + 22 = \boxed{60}$

25) $(-32) - 44 = -32 - 44$
$= \boxed{-76}$

26) $(-12) + (-11)$
$= -12 - 11$
$= \boxed{-23}$

27) $2 + 15 + 4 = \boxed{21}$

28) $16 + (-13) + 5$
$= 16 - 13 + 5$
$= 3 + 5$
$= 8$

Multiplying Integers

Find each product.

1) $6 \times -4 = -24$

2) $4 \times 2 = \boxed{8}$

3) $3 \times -4 = -12$

4) $-6 \times 4 = \boxed{-24}$

5) $5 \times -4 = -20$

6) $-3 \times 4 = \boxed{-12}$

7) $-5 \times 6 = -30$

8) $-2 \times -1 = \boxed{2}$

9) $-8 \times -2 = 16$

10) $11 \times 12 = 121$

11) $-7 \times 5 = -35$

12) $9 \times -6 = -54$

13) $10 \times 5 = 50$

14) $9 \times 2 = 18$

15) $-12 \times 7 = -84$

16) $8 \times -12 = -96$

17) $9 \times 10 \times 6$
$= 90 \times 6$
$= 540$

18) $-6 \times -10 \times -8$
$= (+60)(-8)$
$= -480$

19) $7 \times 9 \times 7$
$= 63 \times 7$
$= 441$

20) $6 \times 6 \times -2$
$= 36(-2)$
$= -72$

21) $-5 \times -4 \times -10$
$= (20)(-10)$
$= -200$

22) $9 \times 9 \times -5$
$= 81(-5)$
$= -405$

23) $8 \times 3 \times 8$
$= 24 \times 8$
$= 192$

24) $7 \times 5 \times -5$
$= 35(-5)$
$= -175$

Dividing Integers

Find each quotient.

1) $35 \div -5 = -7$

2) $-8 \div 4 = -2$

3) $-24 \div 4 = -6$

4) $-8 \div -2 = 4$

5) $8 \div 4 = 2$

6) $-24 \div 8 = -3$

7) $-21 \div 7 = -3$

8) $6 \div -6 = -1$

9) $-132 \div -11 = 12$

10) $-60 \div -15 = 4$

11) $-52 \div -4 = 13$

12) $60 \div 12 = 5$

13) $6 \div -1 = -6$

14) $75 \div 15 = 5$

15) $65 \div -13 = -5$

16) $12 \div 4 = 3$

17) $-168 \div -12 = 14$

18) $-8 \div 2 = -4$

19) $\frac{-105}{7} = -15$

20) $\frac{-4}{-1} = 4$

21) $\frac{-10}{-2} = 5$

22) $\frac{-144}{12} = -12$

23) $\frac{24}{-12} = -2$

24) $\frac{60}{-15} = -4$

Add/Subtracting Fractions and Mixed Numbers

Evaluate each expression.

1) $\frac{7}{8} - \frac{5}{8} = \frac{7-5}{8}$
$= \frac{2}{8}$ GCF: 2
$= 1/4$

2) $\frac{1}{8} + \frac{13}{8}$
$= \frac{1+13}{8}$
$= \frac{14}{8} = 7/4$

3) $\frac{5}{4} + \frac{5}{4} = \frac{5+5}{4}$
$= \frac{10}{4}$ GCF: 2
$= 5/2$

4) $\frac{7}{6} - \frac{7}{6}$
$= \frac{7-7}{6}$
$= \frac{0}{6} = 0$

5) $\frac{3}{5} + \frac{1}{5} = \frac{3+1}{5}$
$= 4/5$

6) $\frac{11}{6} + \frac{7}{6}$
$= \frac{11+7}{6}$
$= \frac{18}{6} = 3$

7) $\frac{1}{7} + \frac{4}{7} = \frac{1+4}{7}$
$= 5/7$

8) $\frac{9}{8} - \frac{3}{8}$
$= \frac{9-3}{8}$
$= \frac{6}{8}$ → $3/4$

9) $\frac{1}{4} + \left(-\frac{11}{7}\right) = \frac{1 \times 7}{4 \times 7} \quad \frac{11 \times 4}{7 \times 4}$ LCD=28
$= \frac{7}{28} - \frac{44}{28}$
$= \frac{7-44}{28} \Rightarrow \frac{-37}{28}$

10) $\frac{7}{4} + \left(-\frac{1}{2}\right)$
$= \frac{7}{4} - \frac{1 \times 2}{2 \times 2}$ → $3/2$
$= \frac{7}{4} - \frac{1}{4}$
$= \frac{6}{4}$

11) $\frac{1}{3} + \left(-\frac{11}{6}\right) = \frac{1 \times 2}{3 \times 2} \quad \frac{11}{6}$ LCD: 6
$= \frac{2}{6} - \frac{11}{6}$
$= \frac{2-11}{6}$
$= \frac{-9}{6}$ GCF=3 → $\frac{-3}{2}$

12) $\frac{2}{5} - \left(-\frac{11}{7}\right)$
$= \frac{2 \times 7}{5 \times 7} + \frac{11 \times 5}{7 \times 5}$ LCD: 35
$= \frac{14}{35} + \frac{55}{35}$
$= \frac{14+55}{35} = \frac{69}{35}$

Multiplying/Dividing Fractions and Mixed Numbers

Find each product.

1) $-\dfrac{5}{4}\cdot\dfrac{1}{3} = \dfrac{-5\times1}{4\times3}$

$= \dfrac{-5}{12}$

2) $\dfrac{8}{7}\cdot\dfrac{7}{10} = \dfrac{8\times7}{7\times10}$

$= \dfrac{8\times7}{7\times10}$ or $= \dfrac{56}{70}$ GCF=14

$= \dfrac{8}{10}$ GCF=2

$= \boxed{4/5}$ $= \boxed{\dfrac{4}{5}}$

3) $\dfrac{4}{9}\cdot\dfrac{7}{4} = \dfrac{4\times7}{9\times4}$

$\dfrac{4\times7}{9\times4} = 7/9$

$\dfrac{4\times7}{9\times4} = \dfrac{28}{36}$ GCF:4

$= \boxed{\dfrac{7}{9}}$

4) $-\dfrac{2}{3}\cdot\dfrac{5}{4} = \dfrac{(-2)(5)}{(3)(4)}$

$= \dfrac{-10}{12}$ GCF: 2

$= \boxed{-5/6}$

5) $-2\cdot\dfrac{3}{7} = \dfrac{-2}{1}\cdot\dfrac{3}{7}$

$= \dfrac{(-2)(3)}{(1)(7)}$

$= \boxed{\dfrac{-6}{7}}$

6) $-2\dfrac{2}{3}\cdot4\dfrac{1}{10} = -\dfrac{2\times3+2}{3}\cdot\dfrac{4\times10+1}{3}$

$= -\dfrac{6+2}{3}\cdot\dfrac{40+1}{3}$

$= -\dfrac{8}{3}\cdot\dfrac{41}{3}$

$= \dfrac{(-8)(41)}{(3)(3)} = \dfrac{-328}{9}$

7) $-2\dfrac{1}{5}\cdot-1\dfrac{3}{4}$

8) $-1\dfrac{1}{4}\cdot9$

$= -\dfrac{4\times1+1}{4}\cdot9$

$= -\dfrac{4+1}{4}\cdot9$

$= -\dfrac{5}{4}\cdot9 \Rightarrow \boxed{\dfrac{-45}{4}}$

9) $-1\dfrac{5}{7}\cdot-2\dfrac{1}{2}$

10) $-2\dfrac{3}{8}\cdot2\dfrac{1}{2}$

Find each quotient.

11) $\dfrac{-1}{5}\div\dfrac{7}{4}$

$= \dfrac{-1}{5}\cdot\dfrac{4}{7}$

$= \boxed{\dfrac{-4}{35}}$

12) $\dfrac{-1}{2}\div\dfrac{5}{4}$

$= \dfrac{-1}{2}\times\dfrac{4}{5}$

$= \dfrac{-4}{10}$ GCF= 2

$= \boxed{-2/5}$

13) $\dfrac{-3}{2}\div\dfrac{-10}{7}$

$= \dfrac{-3}{2}\times\dfrac{7}{-10}$

$= \dfrac{-21}{-20}$

$= 21/20$

14) $\dfrac{1}{2}\div\dfrac{8}{7}$

$= \dfrac{1}{2}\times\dfrac{8}{7}$

$= \dfrac{1\times8}{2\times7}$

$= \dfrac{8}{14}$ GCF:2 $\Rightarrow 4/7$

15) $\dfrac{-9}{5}\div2$

$= \dfrac{-9}{5}\cdot\dfrac{1}{2}$

$= \boxed{-9/10}$

16) $-3\dfrac{5}{9}\div3$

$= -\dfrac{3\times9+5}{9}\times\dfrac{1}{3}$

$= -\dfrac{32}{9}\times\dfrac{1}{3}$

$= \dfrac{-32}{27}$

17) $-2\div-3\dfrac{4}{5}$

$= -2\div-\dfrac{3\times5+4}{5}$

$= -2\div-\dfrac{19}{5}$

$= -2\times\dfrac{-5}{19}$

$= \boxed{20/19}$

18) $\dfrac{1}{9}\div-1\dfrac{1}{3}$

$= \dfrac{1}{9}\div\left(-\dfrac{3+1}{3}\right)$

$= \dfrac{1}{9}\div\dfrac{-4}{3}$

$= \dfrac{1}{9}\times\dfrac{3}{-4}$

$= \dfrac{3}{-36}$ GCF=3

$= \boxed{-1/12}$

19) $1\dfrac{6}{7}\div5\dfrac{3}{4}$

$= \dfrac{7\times1+6}{7}\div\dfrac{5\times4+3}{4}$

$= \dfrac{13}{7}\div\dfrac{23}{4}$

$= \dfrac{13}{7}\cdot\dfrac{4}{23} \Rightarrow \dfrac{52}{161}$

20) $-3\dfrac{7}{10}\div2\dfrac{1}{4}$

$= -\dfrac{3\times10+7}{10}\div\dfrac{2\times4+1}{4}$

$= -\dfrac{37}{10}\div\dfrac{9}{4}$

$= \dfrac{-37}{10}\cdot\dfrac{4}{9}$

$= \dfrac{-148}{90}$ GCF: 2

$= \dfrac{-74}{45}$

Order of Operations

D

Evaluate each expression.

1) $(30 - 3) \div 3$

$= 27 \div 3$

$= 9$

2) $(21 - 5) \div 8$

$= 16 \div 8$

$= 2$

3) $1 + 7^2 = 1 + 49$

$= 50$

4) $5 \times 4 - 8$

$= 20 - 8$

$= 12$

5) $8 + 6 \times 9 = 8 + 54$

$= 62$

6) $3 + 17 \times 5$

$= 3 + 85$

$= 88$

7) $7 + 12 \times 11 = 7 + 131$

$= 138$

8) $15 + 40 \div 20$

$= 15 + 2$

$= 17$

9) $20 + 16 - 15$

$= 36 - 15$

$= 21$

10) $19 - 15 - 3$

$= 4 - 3$

$= 1$

11) $9 \times (3 + 3) \div 6$

$= 9 \times (6) \div 6$

$= 54 \div 6$

$= \boxed{9}$

12) $(9 + 18 - 3) \div 8$

$= (24) \div 8$

$= \boxed{3}$

13) $9 + 6 \div (8 - 2)$

$= 9 + 6 \div 6$

$= 9 + 1$

$= 10$

14) $4(4 \div 2 + 4)$

$= 4(2 + 4)$

$= 4(6)$

$= 24$

15) $6 + (5 + 8) \times 4$

$= 6 + (13)4$

$= 6 + 52$

$= \boxed{58}$

16) $6 \times 6 - (7 + 5)$

$= 36 - (12)$

$= 36 - 12$

$= \underline{24}$

17) $(9 \times 2) \div (2 + 1)$

$= (18) \div (3)$

$= \boxed{6}$

18) $2 - (4 + 3 - 6)$

$= 2 - (1)$

$= \underline{1}$

19) $7 \times 7 - (8 - 2)$

$= 49 - (6)$

$= \boxed{43}$

20) $9 - 7 - 6 \div 6$

$= 2 - 1$

$= 1$

21) $(4 - 1 + 8 \div 8) \times 5$

$= (4 - 1 + 1) \times 5$

$= (4)(5)$

$= \boxed{20}$

22) $(10 \times 2) \div (1 + 1)$

$= (20) \div (2)$

$= \boxed{10}$

23) $7 \times 9 - 7 - 3 \times 5$

$= 63 - 7 - 15$

$= \boxed{41}$

24) $8 - 1 - (18 - 2) \div 8$

$= 8 - 1 - (16) \div 8$

$= 8 - 1 - 2$

$= \boxed{5}$

Evaluating Variable Expressions

Date_____

Evaluate each using the values given.

1) $n^2 - m$; use $m = 7$, and $n = 8$

$= (8)^2 - 7$

$= 64 - 7$

$= 57$

2) $8(x - y)$; use $x = 5$, and $y = 2$

$= 8(5 - 2)$

$= 8(3)$

$= 24$

3) $yx \div 2$; use $x = 7$, and $y = 2$

$= (2)(7) \div 2$

$= 14 \div 2$

$= \boxed{7}$

4) $m - n \div 4$; use $m = 5$, and $n = 8$

$= 5 - 8 \div 4$

$= 5 - 2$

$= \boxed{3}$

5) $x - y + 6$; use $x = 6$, and $y = 1$

$= 6 - 1 + 6$

$= \boxed{11}$

6) $z + x^3$; use $x = 1$, and $z = 19$

$= 19 + (1)^3$

$= 19 + 1$

$= \boxed{20}$

7) $y + yx$; use $x = 15$, and $y = 8$

$= 8 + 8(15)$

$= 8 + 120$

$= \boxed{128}$

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

$= 12 \div 6 + 10$

$= 6 + 10$

$= \boxed{16}$

9) $x + 8 - y$; use $x = 20$, and $y = 17$

$= 20 + 8 - 17$

$= 28 - 17$

$= \boxed{11}$

10) $15 - (m + p)$; use $m = 3$, and $p = 10$

$= 15 - (3 + 10)$

$= 15 - (13)$

$= 2$

11) $10 - x + y \div 2$; use $x = 5$, and $y = 2$

$= 10 - 5 + 2 \div 2$

$= 10 - 5 + 1$

$= 5 + 1$

$= 6$

12) $p - 2 + qp$; use $p = 7$, and $q = 4$

$= 7 - 2 + 4(7)$

$= 7 - 2 + 28$

$= 5 + 28$

$= 33$

13) $zy + 4y$; use $y = 5$, and $z = 2$

$= (2)(5) + 4(5)$

$= 10 + 20$

$= \boxed{30}$

14) $b(a + b) + a$; use $a = 9$, and $b = 4$

$= 4(9 + 4) + 9$

$= 4(13) + 9$

$= 52 + 9$

$= \boxed{61}$

15) $p^2 \div 4 - m$; use $m = 3$, and $p = 4$

$= 4^2 \div 4 - 3$

$= 16 \div 4 - 3$

$= 4 - 3$

$= 1$

16) $x(y \div 3)^2$; use $x = 4$, and $y = 9$

$= 4(9 \div 3)^2$

$= 4(3)^2$

$= 4(9)$

$= 36$

17) $4 + m + n - m$; use $m = 4$, and $n = 9$

$= 4 + 4 + 9 - 4$

$= -5$

18) $qp + q - p$; use $p = 7$, and $q = 3$

$= (3)(7) + (3) - (7)$

$= 21 + 3 - 7$

$= \boxed{17}$

19) $mn \div 6 + 10$; use $m = 7$, and $n = 6$

$= (7)(6) \div 6 + 10$

$= 42 \div 6 + 10$

$= 7 + 10$

$= \boxed{17}$

20) $h + j(j - h)$; use $h = 2$, and $j = 6$

$= 2 + 6(6 - 2)$

$= 2 + 6(4)$

$= 2 + 24$

$= 26$

21) $(b - 1)^2 + a^2$; use $a = 6$, and $b = 1$

$= (1 - 1)^2 + 6^2$

$= 0^2 + 36$

$= 0 + 36$

$= 36$

22) $y(x - (9 - 4y))$; use $x = 4$, and $y = 2$

$= 2[4 - (9 - 4 \cdot 2)]$

$= 2[4 - (9 - 8)]$

$= 2[4 - 1]$

$= 2(3)$

$= 6$

23) $x - \left(x - \left(x - y^3\right)\right)$; use $x = 9$, and $y = 1$

$= 9 - (9 - (9 - 1^3))$

$= 9 - (9 - (8))$

$= 9 - (9 - (8))$

$= 9 - (1)$

$= \boxed{8}$

24) $j(h - 9)^3 + 2$; use $h = 9$, and $j = 8$

$= 8(9 - 9)^3 + 2$

$= 0 + 2$

$= 2$

Proportion Word Problems

Date_____ Period_

Answer each question and round your answer to the nearest whole number.

1) If you can buy one can of pineapple chunks for $2 then how many can you buy with $10?

$$\frac{\$2}{1} = \frac{\$10}{x}$$

$$\boxed{x=5}$$

2) One jar of crushed ginger costs $2. How many jars can you buy for $4?

$$\frac{\$2}{1} = \frac{\$4}{x}$$

$$\boxed{x=2}$$

3) One cantaloupe costs $2. How many cantaloupes can you buy for $6?

$$\frac{\$2}{1} = \frac{\$6}{x}$$

$$\boxed{x=6}$$

4) One package of blueberries costs $3. How many packages of blueberries can you buy for $9?

$$\frac{\$3}{1} = \frac{\$9}{x}$$

$$\boxed{x=3}$$

5) Shawna reduced the size of a rectangle to a height of 2 in. What is the new width if it was originally 24 in wide and 12 in tall?

$$\frac{24}{12} = \frac{x}{2}$$

÷6

$$x = 24÷6 \quad \therefore \text{Its new width is 4 in}$$
$$= 4$$

6) Ming was planning a trip to Western Samoa. Before going, she did some research and learned that the exchange rate is 6 Tala for $2. How many Tala would she get if she exchanged $6?

$$\frac{\$2}{6T} = \frac{\$6}{x}$$

×3

$$\boxed{x=18} \qquad \therefore \text{She can get 18 Tala}$$

7) Jasmine bought 32 kiwi fruit for $16. How many kiwi can Lisa buy if she has $4?

$$\frac{\$16}{32} = \frac{\$4}{x}$$

÷4

$$x = \frac{32}{4} = 8 \quad \therefore \text{She can buy 8}$$

8) If you can buy four bulbs of elephant garlic for $8 then how many can you buy with $32?

$$\frac{\$8}{4} = \frac{\$32}{x}$$

×4

$$x = 4×4 \qquad \therefore \text{I can buy 16}$$
$$= \boxed{16}$$

9) One bunch of seedless black grapes costs $2. How many bunches can you buy for $20?

×10

$$\frac{\$2}{1} = \frac{\$20}{x}$$

×10

$$x = 1×10 \qquad \therefore \text{You can buy 10}$$
$$\boxed{x = 10}$$

10) The money used in Jordan is called the Dinar. The exchange rate is $3 to 2 Dinars. Find how many dollars you would receive if you exchanged 22 Dinars.

×11

$$\frac{\$3}{2} = \frac{x}{22}$$

×11

$$x = 3(11) \qquad \therefore \text{I can get 33 Dinars}$$
$$= 33$$

11) Gabriella bought three cantaloupes for $7. How many cantaloupes can Shayna buy if she has $21?

$$\frac{\$7}{3} = \frac{\$21}{x}$$

×3

$$x = 3(3) \qquad \therefore \text{Shayna can get 9}$$
$$= 9$$

12) Jenny was planning a trip to the United Arab Emirates. Before going, she did some research and learned that the exchange rate is 4 Dirhams for every $1. How many Dirhams would she get if she exchanged $5?

$$\frac{\$1}{4} = \frac{5}{x}$$

×5

$$\therefore \text{Jenny can get 20 Dirhams}$$

$$x = 4(5)$$
$$= 20$$

13) Castel bought four bunches of fennel for $9. How many bunches of fennel can Mofor buy if he has $18?

$$\frac{\$9}{4} = \frac{\$18}{x}$$

×2

$$\therefore \text{Mofor can buy 8}$$

$$x = 4(2)$$
$$= 8$$

14) If you can buy one fruit basket for $30 then how many can you buy with $60?

$$\frac{\$30}{1} = \frac{\$60}{x}$$

×2

$$\therefore \text{I can buy 2 baskets}$$

$$x = 1(2)$$
$$= 2$$

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

15) Asanji took a trip to Mexico. Upon leaving he decided to convert all of his Pesos back into dollars. How many dollars did he receive if he exchanged 42.7 Pesos at a rate of $5.30 = 11.1 Pesos?

$$\frac{\$5.3}{11.1} = \frac{x}{42.7} \quad \text{cross} \times$$

$$5.3(42.7) = 11.1(x)$$

$$\frac{226.31}{11.1} = \frac{11.1x}{11.1}$$

$$x = 20.4 \quad \therefore \text{He'll get } \$20.40$$

16) The currency in Argentina is the Peso. The exchange rate is approximately $3 = 1 Peso. At this rate, how many Pesos would you get if you exchanged $121.10?

$$\frac{\$3}{1} = \frac{\$121.10}{x}$$

$$\therefore \text{I get } \$40.40$$

$$\frac{3x}{3} = \frac{121.10}{3}$$

$$x = 40.4$$

17) Mary reduced the size of a painting to a width of 3.3 in. What is the new height if it was originally 32.5 in tall and 42.9 in wide?

$$\frac{32.5}{42.9} = \frac{x}{3.3}$$

$$32.5(3.3) = 42.9(x)$$

$$\frac{107.25}{42.9} = \frac{42.9x}{42.9}$$

$$\therefore \text{The new height is 2.5 in.}$$

$$x = 2.5$$

18) Molly bought two heads of cabbage for $1.80. How many heads of cabbage can Willie buy if he has $28.80?

$$\frac{\$1.8}{2} = \frac{\$28.80}{x}$$

$$1.8x = 2(28.8)$$

$$\frac{1.8x}{1.8} = \frac{57.6}{1.8}$$

$$\boxed{x = 32} \quad \therefore \text{Molly can get 32 heads of cabbage.}$$

Proportions

State if each pair of ratios forms a proportion.

1) $\dfrac{4}{2}$ and $\dfrac{20}{6}$ ×5 / ×3

no

2) $\dfrac{3}{2}$ and $\dfrac{18}{8}$ ×6 / ×4

no

3) $\dfrac{4}{3}$ and $\dfrac{16}{12}$ ×4 / ×4

YES

4) $\dfrac{4}{3}$ and $\dfrac{8}{6}$ ×2 / ×2

YES

5) $\dfrac{12}{24}$ and $\dfrac{3}{4}$ ÷4 / ÷4

YES

6) $\dfrac{6}{9}$ and $\dfrac{2}{3}$ ÷3 / ÷3

YES

Solve each proportion.

7) $\dfrac{10}{k} \ne \dfrac{8}{4}$

$\dfrac{8k}{8} = \dfrac{40}{8}$

$\boxed{k=5}$

8) $\dfrac{m}{10} \ne \dfrac{10}{3}$

$\dfrac{3m}{3} = \dfrac{100}{3}$

$m = \dfrac{100}{3}$

9) $\dfrac{2}{x} \ne \dfrac{7}{9}$

$\dfrac{18}{7} = \dfrac{7x}{7}$

$\boxed{x = \dfrac{18}{7}}$

10) $\dfrac{3}{x} \ne \dfrac{7}{10}$

$\dfrac{30}{7} = \dfrac{7x}{7} \Rightarrow \boxed{x = 30/7}$

11) $\dfrac{4}{9} \ne \dfrac{2}{x}$

$\dfrac{4x}{4} = \dfrac{18}{4}$

$x = \dfrac{18}{4}$ GCF: 2

$\boxed{x = 9/2}$

12) $\dfrac{6}{a} = \dfrac{3}{8}$

13) $\dfrac{8n}{8} = \dfrac{8}{3}$

$\dfrac{24n}{24} = \dfrac{64}{24}$

$n = \dfrac{64}{24}$ GCF: 8

$\boxed{n = 8/3}$

14) $\dfrac{7}{9} = \dfrac{a}{5}$

15) $\dfrac{p}{8} = \dfrac{13}{2}$

$\dfrac{2p}{2} = \dfrac{104}{2}$

$\boxed{P = 52}$

16) $\dfrac{3}{13} = \dfrac{v}{3}$

17) $\dfrac{10}{12} \ne \dfrac{2}{n}$

$\dfrac{10n}{10} = \dfrac{24}{10}$

$n = \dfrac{24}{10}$ GCF = 2

$n = 12/5$

18) $\dfrac{11}{10} = \dfrac{r}{11}$

19) $\dfrac{x}{9} = \dfrac{7}{14}$

$\dfrac{14x}{14} = \dfrac{63}{14}$

$\boxed{x = 63/14}$

20) $\dfrac{a}{10} = \dfrac{11}{14}$

21) $\dfrac{v}{12} = \dfrac{10}{2}$

$\dfrac{2v}{2} = \dfrac{120}{2}$ $\boxed{V=60}$

22) $\dfrac{6}{14} = \dfrac{5}{n}$

Markup, Discount, and Tax (Harder)

Date_____

Find the selling price of each item.

1) Cost of shoes: $29.95
   Markup: 20%
   Tax: 2%

$29.95 \times 12\% = \$35.94$

$35.94 \times 102\% = \$36.66$

2) Cost of a microscope: $269.95
   Markup: 43%
   Tax: 5%

$269.95 \times (143\%) = \$386.0285$

$386.0285 \times (105\%) = \$405.33$

9) Original price of a microphone: $20.00
   Discount: 42%
   Tax: 6%

10) Original price of a jacket: $269.50
    Discount: 24%
    Tax: 6%

3) Cost of a goldfish: $3.45
   Markup: 29%
   Tax: 2%

$3.45 \times (129\%) = 4.4505$

$4.4505 \times (102\%) = \$4.54$

4) Cost of shoes: $99.99
   Markup: 9%
   Tax: 4%

$99.99 \times (109\%) = 108.9891$

$108.9891 \times (104\%) \ \$113.35$

$\therefore \$113.35$

11) Original price of a lizard: $39.99
    Discount: 40%
    Tax: 6%

$39.99 \times (60\%) = 23.994$

$23.994 \times (106\%) = \$25.43$

$\therefore \$25.43$

12) Original price of a microphone: $49.99
    Discount: 5%
    Tax: 5%

$49.99 \times (95\%) = 47.4905$

$47.4905 \times (105\%) = \$49.87$

$\therefore \$49.87$

5) Cost of a shirt: $14.95
   Markup: 25%
   Discount: 45%

$14.95 \times (125\%) = 18.6875$

$18.6875 \times (55\%) \doteq 10.28$

$\therefore \$10.28$

6) Cost of a CD: $23.50
   Markup: 63%
   Discount: 50%

$23.50 \times (163\%) = \$38.305$

$38.305 \times (50\%) \doteq \$19.15$

$\therefore \$19.15$

13) Cost of a hat: $10.50
    Markup: 10%
    Discount: 40%
    Tax: 5%

$\$10.50 (110\%) = \$11.55$

$\$11.55 (60\%) = \$6.93$

$\$6.93 (105\%) \doteq \$7.28$

$\therefore \$7.28$

14) Cost of a pen: $1.95
    Markup: 70%
    Discount: 40%
    Tax: 5%

$\$1.95 \times (170\%) = \$3.315$

$\$3.315 \times (60\%) = \$1.989$

$\$1.989 \times (105\%) = \$2.09$

$\therefore \$2.09$

7) Cost of a puppy: $349.99
   Markup: 41%
   Discount: 23%

$\$349.99 \times (141\%) = \$493.4859$

$\$493.4859 \times (77\%) \doteq \$379.98$

$\therefore \$379.98$

8) Cost of an oil change: $19.95
   Markup: 85%
   Discount: 48%

$\$19.95 \times (185\%) = \$36.9075$

$\$36.9075 \times (52\%) \doteq 19.19$

$\therefore \$19.19$

15) Cost of a computer game: $4.99
    Markup: 40%
    Discount: 55%
    Tax: 1%

$\$4.99 \times (140\%) = \$6.986$

$\$6.986 \times (45\%) = \$3.1437$

$\$3.1437 \times (101\%) \doteq \$3.18$

16) Cost of a hat: $31.50
    Markup: 35%
    Discount: 30%
    Tax: 1%

$\$31.50 \times (135\%) = 42.525$

$\$42.525 \times (70\%) = 29.7675$

$29.7675 \times (101\%) \doteq \$30.07$

Fractions, Decimals, and Percents

Write each as a decimal. Round to the thousandths place.

1) 90% $= \dfrac{90}{100} = 0.900$

2) 30% $= 0.300$

3) 115.9% $= 1.159$

4) 9% $= 0.090$

5) 7% $= 0.070$

6) 65% $= 0.650$

7) 0.3% $= 0.003$

8) 445% $= 0.445$

Write each as a percent. Round to the nearest tenth of a percent.

9) 0.452 $= 45.2\%$

10) 0.006 0.6%

11) 0.002 $= 0.2\%$

12) 0.05 5%

13) 4.78 $= 478\%$

14) 0.1 10%

15) 3.63 $= 363\%$

16) 0.03 3%

Write each as a fraction.

17) 25% $\dfrac{25}{100} = \dfrac{1}{4}$

18) 70% $\dfrac{70}{100} = \dfrac{7}{10}$

19) 93% $= \dfrac{93}{100}$

20) 58% $= \dfrac{58}{100} = \dfrac{29}{50}$

21) 50% $= \dfrac{50}{100} = \dfrac{1}{2}$

22) 66.6% $\dfrac{66.7}{100} = .327$

23) 20% $= \dfrac{20}{100} = \dfrac{1}{5}$

24) 80% $\dfrac{80}{100} = \dfrac{4}{5}$

25) 71% $= \dfrac{71}{100}$

26) 30% $\dfrac{30}{100} = \dfrac{3}{10}$

Write each as a percent. Use repeating decimals when necessary.

27) $\dfrac{1}{2} = 0.5 = 50\%$

28) $\dfrac{1}{8} = 0.125 = 125\%$

29) $\dfrac{2}{3} = 0.\overline{6} = 66.\overline{6}\%$

30) $\dfrac{1}{100} = 1\%$

31) $2\dfrac{1}{10} = \dfrac{2 \times 10 + 1}{10} = \dfrac{21}{10} = \dfrac{210}{100} = 210\%$

32) $\dfrac{3}{8} = 0.375 = 37.5\%$

33) $\dfrac{1}{10} = \dfrac{10}{100} = 10\%$

34) $\dfrac{87}{100} = 87\%$