Math 1010, Exam #2, Fall 2013 Name KEY

Instructions: Show all work. You may round to two decimal places (pennies) unless the problem asks you for a different number of places.

1. The list price of a refrigerator is $750. The retailer can buy the refrigerator at the list price minus 20%. Find the trade discount. (5 points)

$750 * .2 = $150

2. Find the net price is a discount series of 25/15/5 is deducted from $120. (8 points)

$120 (.75)(.85)(.95) = $72.68

3. An invoice for $500 dated December 8 has sales terms of 2/10 ROG. The merchandise arrived December 13th. a) If the bill is paid by December 20th, what is the amount due? b) If the bill is instead paid on January 5th, what is the amount due? (6 points)

a) $500 * .98 = $490

b) $500

4. Explain what the following abbreviations mean. (3 points each)
   a. EOM (on an invoice)

pay before specified day of next month (if invoice dated before 26th)

   b. FOB (on a bill of lading)

buyer must pay freight charges upon receipt to freight company rather than shipper

5. Sakara receives a bill dated October 1 with sales terms of 3/10, 1/15, n/30. Explain what these terms mean. (4 points)

3/10 means she'll get a 3% discount if paid w/in 10 days

1/15 a 1% discount if paid in 15 days

n/30 no discount if paid w/in 30 days

6. A calculator sells for $109.99 and costs the retailer $65.99. What is the markup? What is the markup rate? (5 points)

109.99 − 65.99 = $44 markup

Markup rate based on cost ≈ 66.7%

Markup rate based on selling price ≈ 40%

7. A box of printer paper costs $19.70. Find the selling price if there is a 36% markup on cost. (5 points)

$19.70 \times .36 = 7.09$

$1970 + 7.09 =$

$\$26.79$ selling price

8. What is the rate of markdown if a car normally lists for $15,000 is being sold for $12,375? Round to one decimal place after converting to a percent. (5 points)

$15{,}000 - 12{,}375 = 2625$

$\frac{2625}{15{,}000} = .175$ 17.5% mark down rate

9. Explain how markup based on cost is different than markup based on selling price. (5 points)

markup based on cost is based on the cost to the retailer, but markup based on selling price is based on the list price. Since the list price is higher, 20% markup is diff. in each case.

10. Will the series of markdowns 25% and 35% be more or less than the single markdown of 60%? Explain. (5 points)

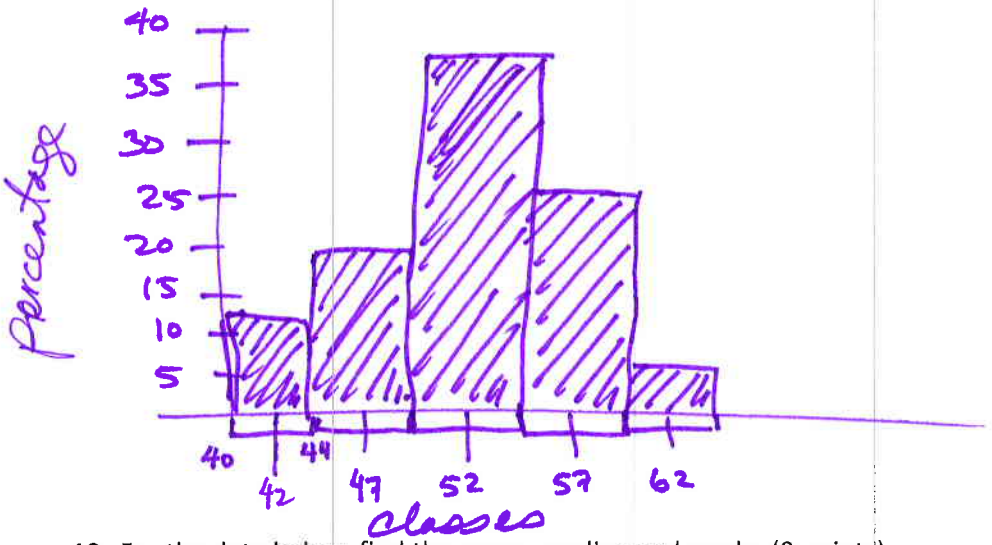
.25 followed by .35

$\Rightarrow 1 - (.75)(.65) = 51.25\%$

which is less than 60% since the second discount doesn't apply to original price.

11. For the data in the table below, convert the frequency data into relative frequency values and then sketch the relative frequency histogram. (8 points)

Class	Frequency	Relative Frequency
40-44	8	13.1%
45-49	12	19.8%
50-54	23	37.7%
55-59	15	24.6%
60-64	3	4.9%
	61	



12. For the data below, find the mean, median and mode. (9 points)

41, 67, 76, 78, 82, 82, 93, 94, 97, 105, 114, 138

mean = $\frac{1067}{12} \approx 88.9$

median = 87.5

mode = 82

13. Find the range of the data set in problem #12. It's possible to estimate the value of the standard deviation by dividing the range by 4. What is that estimate? (8 points)

range = 138 − 41 = 97

$s \approx \frac{97}{4} = 24.25$

14. Sherri works 44 hours in a week for an hourly wage of $11.15/hr with overtime paid at time-and-a-half. How much did she earn that week?(5 points)

$40 \times 11.15 = 446$

$4 \times 11.15 \times 1.5 = 66.90$

$\$512.90$

15. Elliot is paid a the following differential piece rate: 1-100: $2.58; 101-250: $2.72; 251+: $3.15. Find his gross earnings if he completes 585 pieces. (8 points)

$100 * 2.58 = 258$

$150 * 2.72 = 408$

$335 * 3.15 = 1055.25$

$\$1721.25$

$250 - 100 = 150$

$100 + 150 = 250$

$585 - 250 = 335$

16. Michael's gross earnings are $776.00. The Medicare tax rate is 1.45% and the Social Security rate is 6.2%. Find the withholding amounts from both. (6 points)

medicare $776 * 0.0145 = 11.25

SS $776 * 0.062 = 48.11

17. If Toby earns $1500 semimonthly, and is single with three deductions, use the attached table to calculate federal withholding each pay period. (5 points)

$111.00

18. Use the percentage method and the second attached table to calculate Toby's withholding for the same conditions. The table for withholding allowances is shown below. (6 points)

3(152.08) = 456.24

1500 − 456.24 = 1043.76

1043.76 − 434 = 609.76

18.20 + 609.76 * 0.15 =

18.20 + 91.46 = $109.66

Payroll Period	Per withholding Allowance
Weekly	$70.19
Biweekly	$140.38
Semimonthly	$152.08 ←
Monthly	$304.17
Quarterly	$912.50
Semi-annually	$1825.00
Annually	$3650.00
Daily	$14.04

PAYROLL

SINGLE Persons — **SEMIMONTHLY** Payroll Period

(For Wages Paid Through December 2010)

And the wages are—		And the number of withholding allowances claimed is—										
At least	But less than	0	1	2	3	4	5	6	7	8	9	10
		The amount of income tax to be withheld is—										
$0	$260	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260	270	1	0	0	0	0	0	0	0	0	0	0
270	280	2	0	0	0	0	0	0	0	0	0	0
280	290	3	0	0	0	0	0	0	0	0	0	0
290	300	4	0	0	0	0	0	0	0	0	0	0
300	310	5	0	0	0	0	0	0	0	0	0	0
310	320	6	0	0	0	0	0	0	0	0	0	0
320	330	7	0	0	0	0	0	0	0	0	0	0
330	340	8	0	0	0	0	0	0	0	0	0	0
340	350	9	0	0	0	0	0	0	0	0	0	0
350	360	10	0	0	0	0	0	0	0	0	0	0
360	370	11	0	0	0	0	0	0	0	0	0	0
370	380	12	0	0	0	0	0	0	0	0	0	0
380	390	13	0	0	0	0	0	0	0	0	0	0
390	400	14	0	0	0	0	0	0	0	0	0	0
400	410	15	0	0	0	0	0	0	0	0	0	0
410	420	16	1	0	0	0	0	0	0	0	0	0
420	430	17	2	0	0	0	0	0	0	0	0	0
430	440	18	3	0	0	0	0	0	0	0	0	0
440	450	20	4	0	0	0	0	0	0	0	0	0
450	460	21	5	0	0	0	0	0	0	0	0	0
460	470	23	6	0	0	0	0	0	0	0	0	0
470	480	24	7	0	0	0	0	0	0	0	0	0
480	490	26	8	0	0	0	0	0	0	0	0	0
490	500	27	9	0	0	0	0	0	0	0	0	0
500	520	30	11	0	0	0	0	0	0	0	0	0
520	540	33	13	0	0	0	0	0	0	0	0	0
540	560	36	15	0	0	0	0	0	0	0	0	0
560	580	39	17	1	0	0	0	0	0	0	0	0
580	600	42	19	3	0	0	0	0	0	0	0	0
600	620	45	22	5	0	0	0	0	0	0	0	0
620	640	48	25	7	0	0	0	0	0	0	0	0
640	660	51	28	9	0	0	0	0	0	0	0	0
660	680	54	31	11	0	0	0	0	0	0	0	0
680	700	57	34	13	0	0	0	0	0	0	0	0
700	720	60	37	16	0	0	0	0	0	0	0	0
720	740	63	40	17	2	0	0	0	0	0	0	0
740	760	66	43	20	4	0	0	0	0	0	0	0
760	780	69	46	23	5	0	0	0	0	0	0	0
780	800	72	49	26	8	0	0	0	0	0	0	0
800	820	75	52	29	10	0	0	0	0	0	0	0
820	840	78	55	32	12	0	0	0	0	0	0	0
840	860	81	58	35	14	0	0	0	0	0	0	0
860	880	84	61	38	16	1	0	0	0	0	0	0
880	900	87	64	41	18	3	0	0	0	0	0	0
900	920	90	67	44	21	6	0	0	0	0	0	0
920	940	93	70	47	24	7	0	0	0	0	0	0
940	960	96	73	50	27	9	0	0	0	0	0	0
960	980	99	76	53	30	11	0	0	0	0	0	0
980	1000	102	79	56	33	13	0	0	0	0	0	0
1000	1020	105	82	59	36	15	0	0	0	0	0	0
1020	1040	108	85	62	39	17	2	0	0	0	0	0
1040	1060	111	88	65	42	19	4	0	0	0	0	0
1060	1080	114	91	68	45	22	6	0	0	0	0	0
1080	1100	117	94	71	48	25	8	0	0	0	0	0
1100	1120	120	97	74	51	28	10	0	0	0	0	0
1120	1140	123	100	77	54	31	12	0	0	0	0	0
1140	1160	126	103	80	57	34	14	0	0	0	0	0
1160	1180	129	106	83	60	37	16	1	0	0	0	0
1180	1200	132	109	86	63	40	18	3	0	0	0	0
1200	1220	135	112	89	66	43	21	5	0	0	0	0
1220	1240	138	115	92	69	46	24	7	0	0	0	0
1240	1260	141	118	95	72	49	27	9	0	0	0	0
1260	1280	144	121	98	75	52	30	11	0	0	0	0
1280	1300	147	124	101	78	55	33	13	0	0	0	0
1300	1320	150	127	104	81	58	36	15	0	0	0	0
1320	1340	153	130	107	84	61	39	17	1	0	0	0
1340	1360	156	133	110	87	64	42	19	3	0	0	0
1360	1380	159	136	113	90	67	45	22	5	0	0	0
1380	1400	162	139	116	93	70	48	25	7	0	0	0
1400	1420	165	142	119	96	73	51	28	9	0	0	0
1420	1440	168	145	122	99	76	54	31	11	0	0	0
1440	1460	171	148	125	102	79	57	34	13	0	0	0
1460	1480	174	151	128	105	82	60	37	15	0	0	0
1480	1500	177	154	131	108	85	63	40	17	2	0	0
1500	1520	180	157	134	111	88	66	43	20	4	0	0
1520	1540	183	160	137	114	91	69	46	23	6	0	0
1540	1560	186	163	140	117	94	72	49	26	8	0	0
1560	1580	189	166	143	120	97	75	52	29	10	0	0
1580	1600	192	169	146	123	100	78	55	32	12	0	0
1600	1620	195	172	149	126	103	81	58	35	14	0	0
1620	1640	198	175	152	129	106	84	61	38	16	1	0
1640	1660	201	178	155	132	109	87	64	41	18	3	0
1660	1680	204	181	158	135	112	90	67	44	21	5	0
1680	1700	207	184	161	138	115	93	70	47	24	7	0
1700	1720	210	187	164	141	118	96	73	50	27	9	0
1720	1740	213	190	167	144	121	99	76	53	30	11	0
1740	1760	216	193	170	147	124	102	79	56	33	13	0
1760	1780	219	196	173	150	127	105	82	59	36	15	0
1780	1800	222	199	176	153	130	108	85	62	39	17	2
1800	1820	225	202	179	156	133	111	88	65	42	19	4
1820	1840	228	205	182	159	136	114	91	68	45	22	6
1840	1860	231	208	185	162	139	117	94	71	48	25	9
1860	1880	234	211	188	165	142	120	97	74	51	28	10
1880	1900	237	214	191	168	145	123	100	77	54	31	12
1900	1920	240	217	194	171	148	126	103	80	57	34	14
1920	1940	243	220	197	174	151	129	106	83	60	37	16
1940	1960	246	223	200	177	154	132	109	86	63	40	18
1960	1980	249	226	203	180	157	135	112	89	66	43	20
1980	2000	252	229	206	183	160	138	115	92	69	46	23
2000	2020	255	232	209	186	163	141	118	95	72	49	26
2020	2040	258	235	212	189	166	144	121	98	75	52	29
2040	2060	261	238	215	192	169	147	124	101	78	55	32
2060	2080	264	241	218	195	172	150	127	104	81	58	35
2080	2100	267	244	221	198	175	153	130	107	84	61	38
2100	2120	270	247	224	201	178	156	133	110	87	64	41
2120	2140	273	250	227	204	181	159	136	113	90	67	44
$2140 and over		Use Table 3(a) for a **SINGLE** person on page 39. Also see the instructions on page 37.										

FIGURE 2

Portion of IRS Withholding Table for Single Persons Paid Semimonthly

Tables for Percentage Method of Withholding

(For Wages Paid in 2010)

TABLE 1 — WEEKLY Payroll Period

(a) SINGLE person (including head of household) —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $116		$0	
Over —	But not over —		of excess over —
$116	— $200	10%	— $116
$200	— $693	$8.40 plus 15%	— $200
$693	— $1,302	$82.35 plus 25%	— $693
$1,302	— $1,624	$234.60 plus 27%	— $1,302
$1,624	— $1,687	$321.54 plus 30%	— $1,624
$1,687	— $3,344	$340.44 plus 28%	— $1,687
$3,344	— $7,225	$804.40 plus 33%	— $3,344
$7,225		$2,085.13 plus 35%	— $7,225

(b) MARRIED person —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $264		$0	
Over —	But not over —		of excess over —
$264	— $471	10%	— $264
$471	— $1,457	$20.70 plus 15%	— $471
$1,457	— $1,809	$168.60 plus 25%	— $1,457
$1,809	— $2,386	$256.60 plus 27%	— $1,809
$2,386	— $2,789	$412.39 plus 25%	— $2,386
$2,789	— $4,173	$513.14 plus 28%	— $2,789
$4,173	— $7,335	$900.66 plus 33%	— $4,173
$7,335		$1,944.12 plus 35%	— $7,335

TABLE 2 — BIWEEKLY Payroll Period

(a) SINGLE person (including head of household) —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $233		$0	
Over —	But not over —		of excess over —
$233	— $401	10%	— $233
$401	— $1,387	$16.80 plus 15%	— $401
$1,387	— $2,604	$164.70 plus 25%	— $1,387
$2,604	— $3,248	$466.95 plus 27%	— $2,604
$3,248	— $3,373	$642.69 plus 30%	— $3,248
$3,373	— $6,688	$680.33 plus 28%	— $3,373
$6,688	— $14,450	$1,608.53 plus 33%	— $6,688
$14,450		$4,169.99 plus 35%	— $14,450

(b) MARRIED person —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $529		$0	
Over —	But not over —		of excess over —
$529	— $942	10%	— $529
$942	— $2,913	$41.30 plus 15%	— $942
$2,913	— $3,617	$336.95 plus 25%	— $2,913
$3,617	— $4,771	$512.95 plus 27%	— $3,617
$4,771	— $5,579	$824.53 plus 25%	— $4,771
$5,579	— $8,346	$1,026.53 plus 28%	— $5,579
$8,346	— $14,669	$1,801.29 plus 33%	— $8,346
$14,669		$3,887.88 plus 35%	— $14,669

TABLE 3 — SEMIMONTHLY Payroll Period

(a) SINGLE person (including head of household) —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $252		$0	
Over —	But not over —		of excess over —
$252	— $434	10%	— $252
$434	— $1,502	$18.20 plus 15%	— $434
$1,502	— $2,821	$178.40 plus 25%	— $1,502
$2,821	— $3,519	$508.15 plus 27%	— $2,821
$3,519	— $3,654	$696.61 plus 30%	— $3,519
$3,654	— $7,246	$737.11 plus 28%	— $3,654
$7,246	— $15,654	$1,742.87 plus 33%	— $7,246
$15,654		$4,517.51 plus 35%	— $15,654

(b) MARRIED person —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $573		$0	
Over —	But not over —		of excess over —
$573	— $1,021	10%	— $573
$1,021	— $3,156	$44.80 plus 15%	— $1,021
$3,156	— $3,919	$365.05 plus 25%	— $3,156
$3,919	— $5,169	$555.80 plus 27%	— $3,919
$5,169	— $6,044	$893.30 plus 25%	— $5,169
$6,044	— $9,042	$1,112.05 plus 28%	— $6,044
$9,042	— $15,892	$1,951.49 plus 33%	— $9,042
$15,892		$4,211.99 plus 35%	— $15,892

TABLE 4 — MONTHLY Payroll Period

(a) SINGLE person (including head of household) —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $504		$0	
Over —	But not over —		of excess over —
$504	— $869	10%	— $504
$869	— $3,004	$36.50 plus 15%	— $869
$3,004	— $5,642	$356.75 plus 25%	— $3,004
$5,642	— $7,038	$1,016.25 plus 27%	— $5,642
$7,038	— $7,308	$1,393.17 plus 30%	— $7,038
$7,308	— $14,492	$1,474.17 plus 28%	— $7,308
$14,492	— $31,308	$3,485.69 plus 33%	— $14,492
$31,308		$9,034.67 plus 35%	— $31,308

(b) MARRIED person —

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $1,146		$0	
Over —	But not over —		of excess over —
$1,146	— $2,042	10%	— $1,146
$2,042	— $6,313	$89.60 plus 15%	— $2,042
$6,313	— $7,838	$730.25 plus 25%	— $6,313
$7,838	— $10,338	$1,111.50 plus 27%	— $7,838
$10,338	— $12,088	$1,786.50 plus 25%	— $10,338
$12,088	— $18,083	$2,224.00 plus 28%	— $12,088
$18,083	— $31,783	$3,902.60 plus 33%	— $18,083
$31,783		$8,423.60 plus 35%	— $31,783

FIGURE 5
IRS Tables for Percentage Method of Withholding

HOW TO Find federal tax withholding per paycheck using the IRS percentage method tables

1. Select the appropriate table in Figure 5 according to the employee's filing status and the type of pay period.
2. Find the income row: In the columns labeled "If the amount of wages (after subtracting withholding allowances) is:" select the "Over—" and "But not over—" interval that includes the employee's percentage method income for the pay period.
3. Find the cell where the income row and the column labeled "of excess over—" intersect, and subtract the amount given in this cell from the employee's percentage method income for the pay period.