

Highlights From the 2003 International Adult Literacy and Lifeskills Survey (ALL)

Background

The Adult Literacy and Lifeskills Survey (ALL) is an international comparative study conducted in 2003 to provide participating countries with information about the skills of their adult populations. ALL measured the literacy and numeracy skills of a nationally representative sample of 16- to 65-year-olds from six participating countries (Bermuda, Canada, Italy, Norway, Switzerland, and the United States). Literacy is defined as the knowledge and skills needed to understand and use information from text and other written formats. Numeracy applies to the knowledge and skills required to manage mathematical demands of diverse situations. A second phase of ALL, in which additional countries are collecting data, is currently under way. This will allow for a greater number of country comparisons.

ALL builds upon earlier national and international studies of adult literacy.¹ Information from ALL addresses questions such as:

- What is the distribution of literacy and numeracy skills among American adults? How do these skill distributions compare to those of other countries?

- What is the relationship between these literacy skills and the economic, social, and personal characteristics of individuals? For example: Do different age or linguistic groups manifest different skill levels? Do males and females perform differently? At what kinds of jobs do people at various literacy levels work? What wages do they earn? How do adults who have completed different levels of education perform?
- What is the relationship between these skills and the economic and social characteristics of nations? For example, how do the skills of the adult labor force of a country match with areas of the economy that are growing?

The purpose of this Issue Brief is to provide selected initial findings from ALL, so the Issue Brief will address only some of these questions. For further results from ALL, see *Learning a Living: First Results of the Adult Literacy and Life Skills Survey* (Statistics Canada and Organization for Economic Cooperation and Development 2005). A technical report for ALL, which describes in detail the procedures used in the design, data collection, quality control, and analysis for the study, is also forthcoming.

Study Description

ALL consisted of two components:

- A background questionnaire designed to collect general participant information (such as sex, age, race/ethnicity, education level, and labor force status) and more targeted questions related to literacy practices, familiarity with information and communication technology, education coursetaking, and health.
- A written assessment of the skills of participants in literacy and numeracy.

Trained interviewers administered approximately 45 minutes of background questions and 60 minutes of assessment items to participants in their homes. Sample items can be found online with this Issue Brief and at <http://nces.ed.gov/surveys/all>. In the United States, a nationally representative sample of 3,420 adults ages 16–65 participated in ALL. Data collection for the United States took place between January and June 2003.

Data in this Issue Brief are shown at the national level for six countries: Bermuda, Canada, Italy, Norway, Switzerland, and the United States. Subnational estimates (for French- and English-speaking Canada, for instance) and estimates for the participating state of Nuevo León in Mexico are available in

¹ An assessment of young adult literacy was conducted in the United States in 1985, an assessment of the literacy of job seekers in 1991, a National Adult Literacy Survey (NALS) in 1992, and a follow-up to NALS, the National Assessment of Adult Literacy (NAAL), was conducted in 2003. ALL is the direct successor to the International Adult Literacy Survey (IALS), which was conducted in three phases (1994, 1996, and 1998) in 20 nations, including the United States. IALS measured adults' prose, document, and quantitative literacy skills. Prose literacy items are made up of continuous texts (formed of sentences organized into paragraphs). Document literacy items are made up of noncontinuous texts (tables, schedules, charts, graphs, or other texts with clearly defined rows and columns). In IALS, the quantitative literacy scale was made up of continuous and noncontinuous texts in which respondents had to identify and perform one or more arithmetic operations. This scale was replaced with the numeracy scale in ALL, so that change over time can be measured only for prose literacy and document literacy. The numeracy scale was designed to be broader than the quantitative literacy scale, going beyond applying arithmetic skills to a wider range of mathematical skills (e.g., use of number sense, estimation, statistics). An additional skill area, problem solving, was assessed in other participating countries in ALL in 2003; however, the United States did not collect this information. For results in problem solving, see Statistics Canada and Organization for Economic Cooperation and Development (OECD) (2005).

Statistics Canada and Organization for Economic Cooperation and Development (OECD) (2005).

Overall Performance of U.S. Adults

In this Issue Brief, prose literacy and document literacy scores are combined into a single literacy score measured on a scale of 0–500 points. Numeracy scores also range from 0–500. U.S. adults had an average literacy score of 269 and a score of 261 in numeracy (table 1). The United States outperformed Italy in literacy and numeracy, but was outperformed by Bermuda, Norway, and Switzerland in both skill areas. Canada’s average literacy and numeracy scores were not measurably different from those of the United States.

Table 1. Average literacy and numeracy scores of 16- to 65-year-olds, by country: 2003

Literacy		Numeracy	
Country	Score	Country	Score
Norway	293	Switzerland	290
Bermuda	285	Norway	285
Switzerland	274	Bermuda	270
Canada	272	Canada	263
United States	269	United States	261
Italy	228	Italy	233

Score is significantly higher than the U.S. average
 Score is not significantly different from the U.S. average
 Score is significantly lower than the U.S. average
 NOTE: Participants were scored on a 500-point scale.
 SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

In addition to average scores, it can also be informative to examine how well high and low performers scored in each country. Score differences between high and low performers can also help illustrate how widely performance within a country varies.

In both literacy and numeracy, adults in Bermuda and Norway had higher scores than U.S. adults at both the high and low ends of the score distribution. The highest performers (the top 10 percent of adults) had literacy scores of 353 or higher in Bermuda and 348 or higher in Norway, compared to 333 or higher in the United States. The lowest performers (those in the bottom 10 percent) in Bermuda and Norway also outscored their peers in the United States in both literacy and numeracy. The difference between the highest and lowest performers in Norway (approximately 114 points) was smaller than in the United States (where it was 132 points). In Bermuda the difference between high and low achievers (140 points) was not measurably larger than the U.S. difference. In other words,

although scores for Bermudans and Norwegians on average were higher than in the United States, in Bermuda scores were spread to about the same degree as in the United States, while in Norway there was less variation in scores.

Adults in the top 10 percent in Canada also outperformed their peers in the United States in literacy, but those in the bottom 10 percent scored lower than their U.S. peers, and the difference between the Canadian high and low performers in literacy (151 points) was larger than the U.S. difference of 132 points. There was no measurable difference in scores for the top or bottom 10 percent of performers between Canada and the United States in numeracy, but Canada’s spread of scores was again larger than in the United States.

Switzerland’s low performers outscored U.S. low performers in literacy, while their high performers did not score measurably differently. Swiss adults outperformed U.S. adults throughout the distribution in numeracy, and the differences between high and low performers in literacy and numeracy were smaller than in the United States. In contrast, Italian adults scored consistently lower than U.S. adults throughout the distribution in both literacy and numeracy.

Performance of U.S. Adults by Sex and Race/Ethnicity

There was no measurable difference in the literacy performance of men and women in Bermuda, Canada, Norway, or the United States (figure 1). However, in Italy and Switzerland, men outscored women. Men outperformed women on the numeracy scale in every country, with a range from 11 points (Italy) to 18 points (Canada). In the United States, men scored 15 points higher than women on the numeracy scale.

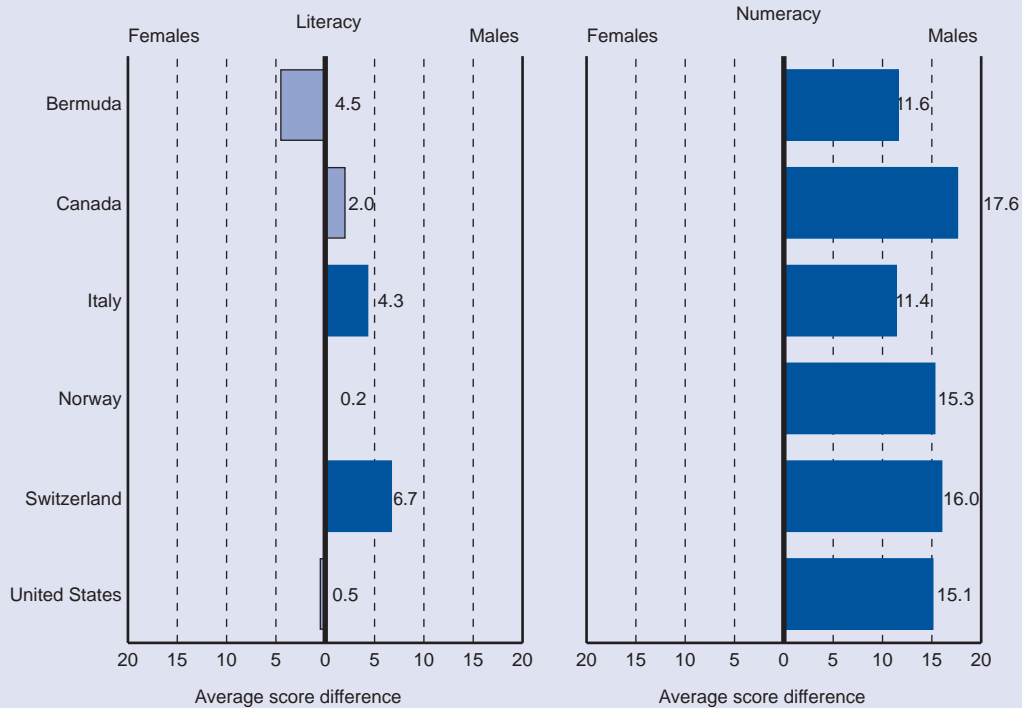
Racial and ethnic groups vary between countries, so it is not feasible to compare their performance across countries on international assessments. Findings are therefore reported here for the United States only. White U.S. adults outscored Black, Hispanic, and Other adults in both literacy and numeracy (figure 2).

There was no measurable difference in the performance of Blacks and Hispanics in literacy or numeracy.

References

Statistics Canada and Organization for Economic Cooperation and Development (OECD). (2005). *Learning a Living: First Results of the Adult Literacy and Life Skills Survey*. Ottawa and Paris: Author.

Figure 1. Differences in average scores of 16- to 65-year old males and females in literacy and numeracy, by country: 2003

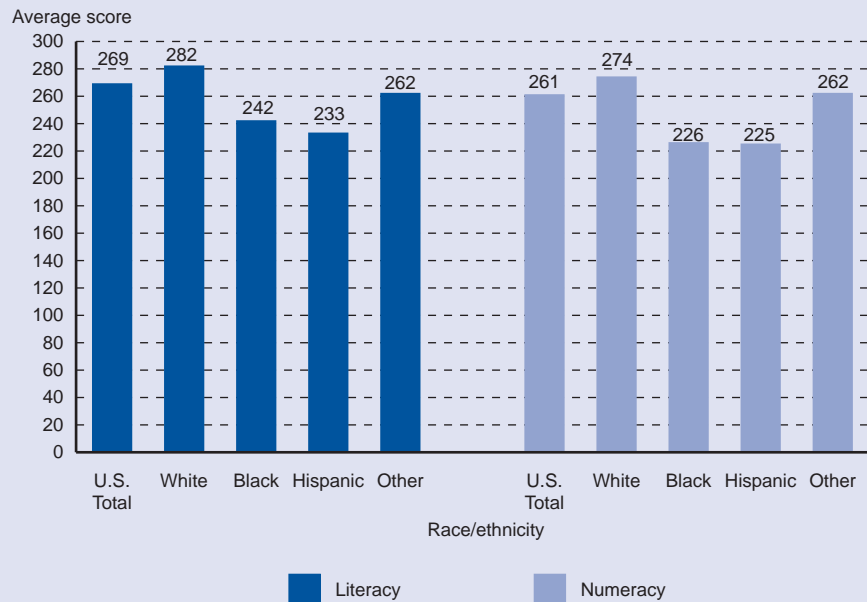


■ Average score difference is statistically significant.
 ■ Average score difference is not statistically significant.

NOTE: Each bar above represents the average score difference between males and females.

SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

Figure 2. Average literacy and numeracy scores of U.S. 16- to 65-year-olds, by race/ethnicity: 2003



NOTE: "White" refers to non-Hispanic White adults, "Black" to non-Hispanic Black adults, and "Hispanic" to Hispanic respondents of any race. "Other" includes adults who selected more than one race and groups (such as Asians, American Indians, or Alaska Natives) for which sample sizes are too small to reliably estimate scores. Participants were scored on a 500-point scale.

SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

The Issue Brief series presents information on education topics of current interest. All estimates shown are based on samples and are subject to sampling variability. All differences discussed in the text are statistically significant at the .05 level. Standard errors and sample items for this Issue Brief can be found on the Web at <http://nces.ed.gov/pubinfo.asp?pubid=2005117>. For more information on ALL, visit <http://nces.ed.gov/surveys/all> or <http://www.ets.org/all>.

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Table 1. Average literacy and numeracy scores of 16- to 65-year-olds, by country: 2003

Country	Literacy		Numeracy	
	Average	s.e.	Average	s.e.
Bermuda	284.9	1.26	269.7	1.54
Canada	271.7	0.60	263.1	0.77
Italy	227.5	1.62	233.3	1.34
Norway	292.6	0.76	284.9	0.98
Switzerland	274.4	1.25	289.8	1.04
United States	269.2	1.41	260.9	1.59

NOTE: Participants were scored on a 500-point scale. s.e. means standard error.

SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

Table 2. Literacy and numeracy scores of 16- to 65-year-olds, by selected percentiles and country: 2003

Country	10 th percentile		25 th percentile		50 th percentile		75 th percentile		90 th percentile	
	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.	Score	s.e.
Literacy										
Bermuda	212.7	2.24	251.0	1.88	287.2	1.73	322.6	1.88	353.0	2.49
Canada	189.7	1.91	237.3	0.99	278.7	1.12	313.3	0.78	340.2	1.00
Italy	154.8	2.90	191.3	2.33	228.6	2.15	265.4	2.11	297.8	2.00
Norway	233.3	2.01	264.5	1.31	296.6	1.10	324.3	1.03	347.7	1.16
Switzerland	215.7	1.57	244.6	1.86	275.1	1.79	305.7	1.87	331.7	2.18
United States	200.7	2.67	236.4	1.75	272.6	1.79	306.5	2.06	332.9	1.96
Numeracy										
Bermuda	197.7	2.34	233.2	2.44	270.0	2.50	308.5	2.14	341.7	1.91
Canada	179.8	1.62	224.9	1.12	268.3	0.88	306.1	1.42	336.9	1.50
Italy	168.1	3.01	200.3	1.68	234.3	1.55	267.1	1.79	296.8	1.83
Norway	224.5	2.02	255.2	1.67	287.4	1.17	316.2	1.36	342.6	1.95
Switzerland	229.5	1.96	257.7	1.70	289.0	1.36	322.2	1.89	351.9	2.17
United States	184.6	3.07	222.4	2.01	263.2	2.00	302.2	2.28	333.2	2.35

NOTE: Participants were scored on a 500-point scale. s.e. means standard error.

SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

Table 3. Average literacy and numeracy scores of 16- to 65-year-olds, by sex, subject, and country: 2003

Country	Total		Male		Female	
	Average	s.e.	Average	s.e.	Average	s.e.
Literacy						
Bermuda	284.9	1.26	282.6	1.62	287.0	1.92
Canada	271.7	0.60	272.7	1.06	270.8	0.83
Italy	227.5	1.62	229.6	2.07	225.3	1.69
Norway	292.6	0.76	292.7	1.10	292.5	1.24
Switzerland	274.4	1.25	277.7	1.24	271.0	1.83
United States	269.2	1.41	269.0	1.92	269.5	1.64
Numeracy						
Bermuda	269.7	1.54	275.7	1.58	264.1	2.38
Canada	263.1	0.77	272.1	1.57	254.5	0.77
Italy	233.3	1.34	239.0	1.68	227.6	1.75
Norway	284.9	0.98	292.4	1.41	277.1	1.32
Switzerland	289.8	1.04	297.8	1.21	281.8	1.47
United States	260.9	1.59	268.6	2.14	253.5	1.90

NOTE: Participants were scored on a 500-point scale. s.e. means standard error.

SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

Table 4. Average U.S. literacy and numeracy scores, by race/ethnicity: 2003

Race/ethnicity	Literacy		Numeracy	
	Average	s.e.	Average	s.e.
Total	269.2	1.41	260.9	1.59
White	282.0	1.90	274.1	1.99
Black	241.5	4.60	226.0	5.39
Hispanic	232.7	4.35	224.6	3.92
Other	262.4	4.36	261.5	5.66

NOTE: "White" refers to non-Hispanic White adults, "Black" to non-Hispanic Black adults, and "Hispanic" to Hispanic respondents of any race. "Other" includes adults who selected more than one race and groups (such as American Indian or Alaska Native) for which sample sizes are too small to reliably estimate scores. Participants were scored on a 500-point scale. s.e. means standard error.

SOURCE: Statistics Canada and Organization for Economic Cooperation and Development (OECD), Adult Literacy and Lifeskills Survey (ALL), 2003.

ALL Prose Literacy Sample Item

MEDCO Aspirin

MEDCO ASPIRIN 500

INDICATIONS: Headaches, muscle pains, rheumatic pains, tooth-aches, earaches. RELIEVES COMMON COLD SYMPTOMS.

DOSAGE: ORAL. 1 or 2 tablets every 6 hours, preferably accompanied by food, for not longer than 7 days. Store in a cool, dry place.

CAUTION: Do not use for gastritis or peptic ulcer. Do not use if taking anticoagulant drugs. Do not use for serious liver illness or bronchial asthma. If taken in large doses and for an extended period, may cause harm to kidneys. Before using this medication for chicken pox or influenza in children, consult with a doctor about Reyes Syndrome, a rare but serious illness. During lactation and pregnancy, consult with a doctor before using this product, especially in the last trimester of pregnancy. If symptoms persist, or in case of an accidental overdose, consult a doctor. Keep out of reach of children.

INGREDIENTS: Each tablet contains
500 mg acetylsalicylic acid.
Excipient c.b.p. 1 tablet.
Reg. No. 88246



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Question 1:

What is the maximum number of days you should take this medicine?

Correct Response

- Seven or 7.

Question 2:

List three situations for which you should consult a doctor.

Correct Response

- Mentions at least THREE of the following:
 - (Before giving medication to children with) chicken pox.
 - (Before giving medication to children with) influenza (Reyes syndrome).
 - (During) lactation.
 - (During) pregnancy.
 - If symptoms persist.
 - (Accidental) overdose.

ALL Document Literacy Sample Item

Clock Radio

RATINGS



Clock radios

Listed by types; within types, listed in order of overall score. Differences in score of 4 points or less were not deemed significant.

1 Brand and model. If you can't find a model, call the company. Phone numbers are listed on page 736.

2 Price. The manufacturer's suggested or approximate retail price, followed by the average advertised price.

3 Dimensions. To the nearest centimeter.

4 Overall score. A composite, encompassing all our tests and judgments. A "perfect" radio would have earned 100 points.

5 Convenience. This composite judgment reflects such things as the legibility of the display, the ease of tuning the radio and setting the alarm, and the presence or absence of useful features.

6 Performance. An overall judgment reflecting performance in our tests of: sensitivity and selectivity; tuning ease; capture ratio, the ability to bring in the stronger of two stations on the same frequency; image rejection, the ability to ignore signals from just above the band, resistance to interference from signals bouncing off aircraft and such.

7 Sensitivity. How well each radio received a station with little interference.

8 Selectivity. How well each radio received clearly a weak station next to a strong one on the dial.

9 Tone quality. Based mainly on computer analysis of the speaker's output and on listening tests, using music from CDs. No model produced high-fidelity sound.

10 Reversible time-setting. This useful feature makes setting clock and alarm times easy. If you overshoot the desired setting, you simply back up.

11 Dual alarm. Lets you set two separate wake-up times.

1 Brand and model	2 Price	3 Dimensions HxWxD, cm	4 Overall Score	5 Convenience	6 Performance	7 Sensitivity	8 Selectivity	9 Tone quality	10 Reversible time-setting	11 Dual alarm	Warranty/months	Advantages	Disadvantages	Comments
Full-featured clock radios														
RCA RP-3690	\$50/\$40	8x25x18	86	●	●	●	●	●	✓	✓	12	A,B,D,H,J,L,O,T,U	A	
Sony ICF-C303	50/45	5x20x15	84	●	●	●	○	●	✓	✓	12	C,E,F,I,N,T	C	
Panasonic RC-X220	50/45	10x28x13	82	●	●	●	○	✓	✓	✓	12	A,G,K,M,O,S,T,U	b,c	A
Realistic 272	50/30	5x28x15	79	●	○	●	●	✓	✓	✓	3	A,G,H,K,O,T	D	
Magnavox AJ3900	65/—	15x38x13	78	○	●	●	●	—	✓	✓	3	D,G,K,M,O,R,T	b,g	B
Emerson AK2745	39/20	8x28x15	70	○	●	●	○	✓	✓	✓	3	G,O	g	K
Soundesign 3753	20/20	8x23x13	62	○	●	●	○	✓	✓	✓	3	J,Q	d,h	J
Basic clock radios														
Realistic 263	28/18	10x20x10	74	○	●	●	○	—	—	—	3	A,D,H,O,P,U	h	—
Soundesign 3622	12/10	5x20x13	68	●	●	●	●	—	—	—	3	U	d	L
Panasonic RC-6064	18/15	5x20x13	67	●	●	●	○	—	—	—	12	—	b,c	—
General Electric 7-4612	13/10	5x20x13	66	●	○	●	○	—	—	—	12	A,D	a,g	—
Lloyds CR001	20/15	5x18x13	64	●	○	●	○	—	—	—	3	U	—	—
Sony ICF-C240	15/13	5x18x15	63	●	○	○	○	—	—	—	12	—	f,g	—
Emerson AK2720	19/10	5x20x13	61	●	○	●	○	—	—	—	3	O,T	e	K
Gran Prix D507	15/10	5x18x10	54	●	●	○	●	—	—	—	3	—	d	—
Clock radios with cassette player														
General Electric 7-4965	60/50	10x30x15	85	●	●	●	●	✓	✓	✓	12	A,D,G,H,K,O,S,T	—	B,E
Panasonic RC-X250	[1]	10x33x13	76	●	○	○	●	✓	✓	✓	12	A,G,K,O,R,U	b,c	A,H
Sony ICF-CS650	75/65	15x28x15	74	○	●	●	○	✓	✓	✓	12	G,R,T,U	c,f,i	A,F,H
Soundesign 3844MGY	40/30	13x30x13	62	○	●	●	●	—	—	—	3	G,K,J,S,U	—	F,G,I,M

[1] Discontinued. Replaced by RC-X260, \$79 list and \$60 average advertised sale price.

Features in Common

All: • Permit snooze time of about 8 min. • Retain time settings during short power failures. Except as noted, all have: • Battery backup for clock and alarm memory. • Red display digits 1 cm. high. • Sleep-time radio play for up to 60 min. before automatic shutdown. • Switch to reset alarm.

Keys to Advantages

A—Alarm works despite power failure.
B—Shows actual time plus up to 2 alarm times.
C—Twin alarms settable for 2 different stations.
D—Tone alarm has adjustable volume control.
E—Memory needs no battery.
F—Digital tuner with presettable stations.
G—Tuner can receive in stereo.
H—Battery-strength indicator.
I—Illuminated tuning dial.
J—Illuminated tuning pointer.

K—Earphone jack.

L—Nap timer.

M—Audio input for tape deck or CD player.

N—Display can show date and time.

O—Display has high/low brightness switch.

P—Display has larger digits than most.

Q—Night light—adjusts for room light.

R—Bass-boost tone control.

S—Treble-cut tone control.

T—Better than most in tuning ease.

U—Better than most in image rejection.

Key to Disadvantages

a—Possible to reset time by accident.
b—Controls for time-setting or dimmer inconveniently located on radio's bottom or rear.
c—Display dimmer than most in brightly lit room.
d—Radio volume must be turned completely down for alarm buzzer to sound.

e—Lacks alarm buzzer; radio is sole alarm.

f—Lacks indication alarm is set.

g—Lacks alarm-reset button.

h—Time-setting lacks fast reverse.

i—No slow forward, fast reverse for time setting.

Key to Comments

A—Display shows green digits.
B—Display shows blue digits.
C—Display uses LCD (liquid crystal) digits.
D—Terminals for external antenna.
E—3-position graphic equalizer.
F—Cassette player lacks Record function.
G—Cassette player lacks Rewind function.
H—Model permits wake-up to cassette play.
I—Cassette-deck flutter worse than most.
J—Warranty repairs cost \$3 for handling.
K—Warranty repairs cost \$3.50 for handling.
L—Warranty repairs cost \$6 for handling.
M—Warranty repairs cost \$10 for handling.

ALL Document Literacy Sample Item—Continued

Question 1:

Which full-featured clock radio is rated highest on performance?

Correct Response

- Magnavox and/or AJ3900.

Question 2:

What two features are not on any basic clock radio?

Correct Response

- Mentions BOTH of the following:
 - 10 and/or Reversible time setting.
 - 11 and/or Dual Alarm.

(Accept either feature name or feature number.)

Question 3:

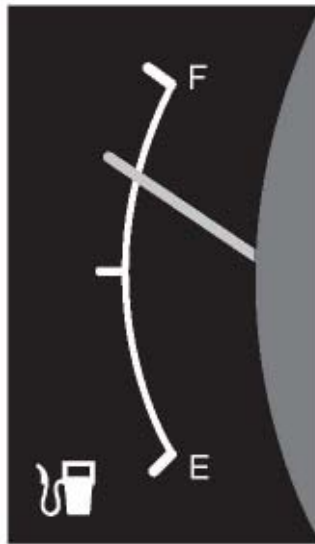
What is the average advertised price for the basic clock radio receiving the highest overall score?

Correct Response

- (\$18 or (\$18.00.

ALL Numeracy Literacy Sample Item

Gas Gauge



Question 1:

The gas tank in this truck holds 48 gallons.

About how many gallons of gas remain in the tank?

Assume the gas gauge is accurate.

Correct Response

- Any answer that falls in the range of 33 to 39 (gallons) (about or approximately).