2 Word Sense Disambiguation (10 points)

Given the following sentences:
In the cold weather, they started to the city. They were least worried protecting themselves against the common cold. After she signed the agreement, a cold chill crept up her spine. "Chill, its not that serious," her husband assured and left to deposit cash at the bank.

2.1 [5 points]

Using WordNet `http://wordnetweb.princeton.edu/perl/webwn` determine the total number of senses for each open class word.

2.2 [5 points]

For each sentence, determine how many distinct combinations of senses exist using WordNet (`http://wordnetweb.princeton.edu/perl/webwn`).

Open vs. Closed classes

- Open vs. Closed classes
  - Closed:
    - determiners: ***a, an, the***
    - pronouns: ***she, he, I***
    - prepositions: ***on, under, over, near, by, …***
    - Why "closed"?
  - Open:
    - Nouns, Verbs, Adjectives, Adverbs.

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: Cold Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **cold**, common cold (a mild viral infection involving the nose and respiratory passages (but not the lungs)) *"will they never find a cure for the common cold?"*
- S: (n) coldness, **cold**, low temperature, frigidity, frigidness (the absence of heat) *"the coldness made our breath visible"; "come in out of the cold"; "cold is a vasoconstrictor"*
- S: (n) **cold**, coldness (the sensation produced by low temperatures) *"he shivered from the cold"; "the cold helped clear his head"*

Adjective

- S: (adj) **cold** (having a low or inadequate temperature or feeling a sensation of coldness or having been made cold by e.g. ice or refrigeration) *"a cold climate"; "a cold room"; "dinner has gotten cold"; "cold fingers"; "if you are cold, turn up the heat"; "a cold beer"*
- S: (adj) **cold** (extended meanings; especially of psychological coldness; without human warmth or emotion) *"a cold unfriendly nod"; "a cold and unaffectionate person"; "a cold impersonal manner"; "cold logic"; "the concert left me cold"*
- S: (adj) **cold** (having lost freshness through passage of time) *"a cold trail"; "dogs attempting to catch a cold scent"*
- S: (adj) **cold** ((color) giving no sensation of warmth) *"a cold bluish grey"*
- S: (adj) **cold** (marked by errorless familiarity) *"had her lines cold before rehearsals started"*
- S: (adj) **cold**, stale, dusty, moth-eaten (lacking originality or spontaneity; no longer new) *"moth-eaten theories about race"; "stale news"*
- S: (adj) **cold** (so intense as to be almost uncontrollable) *"cold fury gripped him"*
- S: (adj) **cold**, frigid (sexually unresponsive) *"was cold to his advances"; "a frigid woman"*
- S: (adj) **cold**, cold-blooded, inhuman, insensate (without compunction or human feeling) *"in cold blood"; "cold-blooded killing"; "insensate destruction"*
- S: (adj) **cold** (feeling or showing no enthusiasm) *"a cold audience"; "a cold response to the new play"*
- S: (adj) **cold** (unconscious from a blow or shock or intoxication) *"the boxer was out cold"; "pass out cold"*
- S: (adj) **cold** (of a seeker; far from the object sought)
- S: (adj) **cold** (lacking the warmth of life) *"cold in his grave"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: Weather Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **weather**, weather condition, conditions, atmospheric condition (the atmospheric conditions that comprise the state of the atmosphere in terms of temperature and wind and clouds and precipitation) *"they were hoping for good weather"; "every day we have weather conditions and yesterday was no exception"; "the conditions were too rainy for playing in the snow"*

Verb

- S: (v) **weather**, endure, brave, brave out (face and withstand with courage) *"She braved the elements"*
- S: (v) **weather** (cause to slope)
- S: (v) **weather** (sail to the windward of)
- S: (v) **weather** (change under the action or influence of the weather) *"A weathered old hut"*

Adjective

- S: (adj) upwind, **weather** (towards the side exposed to wind)

WordNet Search - 3.1

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Word to search for: started Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Verb

- S: (v) get down, begin, get, start out, start, set about, set out, commence (take the first step or steps in carrying out an action) *"We began working at dawn"; "Who will start?"; "Get working as soon as the sun rises!"; "The first tourists began to arrive in Cambodia"; "He began early in the day"; "Let's get down to work now"*
- S: (v) begin, lead off, start, commence (set in motion, cause to start) *"The U.S. started a war in the Middle East"; "The Iraqis began hostilities"; "begin a new chapter in your life"*
- S: (v) depart, part, start, start out, set forth, set off, set out, take off (leave) *"The family took off for Florida"*
- S: (v) begin, start (have a beginning, in a temporal, spatial, or evaluative sense) *"The DMZ begins right over the hill"; "The second movement begins after the Allegro"; "Prices for these homes start at $250,000"*
- S: (v) originate, initiate, start (bring into being) *"He initiated a new program"; "Start a foundation"*
- S: (v) start, start up, embark on, commence (get off the ground) *"Who started this company?"; "We embarked on an exciting enterprise"; "I start my day with a good breakfast"; "We began the new semester"; "The afternoon session begins at 4 PM"; "The blood shed started when the partisans launched a surprise attack"*
- S: (v) startle, jump, start (move or jump suddenly, as if in surprise or alarm) *"She startled when I walked into the room"*
- S: (v) start, start up (get going or set in motion) *"We simply could not start the engine"; "start up the computer"*
- S: (v) start, go, get going (begin or set in motion) *"I start at eight in the morning"; "Ready, set, go!"*
- S: (v) start, take up (begin work or acting in a certain capacity, office or job) *"Take up a position"; "start a new job"*
- S: (v) start (play in the starting lineup)
- S: (v) begin, start (have a beginning characterized in some specified way) *"The novel begins with a murder"; "My property begins with the three maple trees"; "Her day begins with a workout"; "The semester begins with a convocation ceremony"*
- S: (v) begin, start (begin an event that is implied and limited by the nature or inherent function of the direct object) *"begin a cigar"; "She started the soup while it was still hot"; "We started physics in 10th grade"*
- S: (v) start, protrude, pop, pop out, bulge, bulge out, bug out, come out (bulge outward) *"His eyes popped"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: City Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **city**, metropolis, urban center (a large and densely populated urban area; may include several independent administrative districts) *"Ancient Troy was a great city"*
- S: (n) **city** (an incorporated administrative district established by state charter) *"the city raised the tax rate"*
- S: (n) **city**, metropolis (people living in a large densely populated municipality) *"the city voted for Republicans in 1994"*

WordNet Search - 3.1

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Word to search for: were Search WordNet

Display Options: (Select option to change) Change

Word to search for: least Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **least** (something that is of no importance) *"it is the least I can do"; "that is the least of my concerns"*

Adjective

- S: (adj) **least** (the superlative of `little' that can be used with mass nouns and is usually preceded by `the'; a quantifier meaning smallest in amount or extent or degree) *"didn't care the least bit"; "he has the least talent of anyone"*
- S: (adj) small, little (limited or below average in number or quantity or magnitude or extent) *"a little dining room"; "a little house"; "a small car"; "a little (or small) group"*
- S: (adj) little, slight ((quantifier used with mass nouns) small in quantity or degree; not much or almost none or (with `a') at least some) *"little rain fell in May"; "gave it little thought"; "little time is left"; "we still have little money"; "a little hope remained"; "there's slight chance that it will work"; "there's a slight chance it will work"*
- S: (adj) little, small ((of children and animals) young, immature) *"what a big little boy you are"; "small children"*
- S: (adj) fiddling, footling, lilliputian, little, niggling, piddling, piffling, petty, picayune, trivial ((informal) small and of little importance) *"a fiddling sum of money"; "a footling gesture"; "our worries are lilliputian compared with those of countries that are at war"; "a little (or small) matter"; "a dispute over niggling details"; "limited to petty enterprises"; "piffling efforts"; "giving a police officer a free meal may be against the law, but it seems to be a picayune infraction"*
- S: (adj) little, small ((of a voice) faint) *"a little voice"; "a still small voice"*
- S: (adj) short, little (low in stature; not tall) *"he was short and stocky"; "short in*

WordNet Search - 3.1

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Word to search for: worried Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Verb

- S: (v) worry (be worried, concerned, anxious, troubled, or uneasy) *"I worry about my job"*
- S: (v) worry, care (be concerned with) *"I worry about my grades"*
- S: (v) worry, vex (disturb the peace of mind of; afflict with mental agitation or distress) *"I cannot sleep--my daughter's health is worrying me"*
- S: (v) concern, interest, occupy, worry (be on the mind of) *"I worry about the second Germanic consonant shift"*
- S: (v) worry (lacerate by biting) *"the dog worried his bone"*
- S: (v) worry (touch or rub constantly) *"The old man worried his beads"*

Adjective

- S: (adj) disquieted, distressed, disturbed, upset, **worried** (afflicted with or marked by anxious uneasiness or trouble or grief) *"too upset to say anything"; "spent many disquieted moments"; "distressed about her son's leaving home"; "lapsed into disturbed sleep"; "worried parents"; "a worried frown"; "one last worried check of the sleeping children"*
- S: (adj) apprehensive, **worried** (mentally upset over possible misfortune or danger etc) *"apprehensive about her job"; "not used to a city and worried about small things"; "felt apprehensive about the consequences"*

WordNet Search - 3.1

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Word to search for: protecting Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Verb

- S: (v) protect (shield from danger, injury, destruction, or damage) *"Weatherbeater protects your roof from the rain"*
- S: (v) protect (use tariffs to favor domestic industry)

Adjective

- S: (adj) **protecting** (shielding (or designed to shield) against harm or discomfort) *"the protecting blanket of snow"; "a protecting alibi"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: common Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) park, commons, **common**, green (a piece of open land for recreational use in an urban area) *"they went for a walk in the park"*

Adjective

- S: (adj) **common** (belonging to or participated in by a community as a whole; public) *"for the common good"; "common lands are set aside for use by all members of a community"*
- S: (adj) **common** (having no special distinction or quality; widely known or commonly encountered; average or ordinary or usual) *"the common man"; "a common sailor"; "the common cold"; "a common nuisance"; "followed common procedure"; "it is common knowledge that she lives alone"; "the common housefly"; "a common brand of soap"*
- S: (adj) **common**, mutual (common to or shared by two or more parties) *"a common friend"; "the mutual interests of management and labor"*
- S: (adj) **common**, usual (commonly encountered) *"a common (or familiar) complaint"; "the usual greeting"*
- S: (adj) **common**, vernacular, vulgar (being or characteristic of or appropriate to everyday language) *"common parlance"; "a vernacular term"; "vernacular speakers"; "the vulgar tongue of the masses"; "the technical and vulgar names for an animal species"*
- S: (adj) **common**, plebeian, vulgar, unwashed (of or associated with the great masses of people) *"the common people in those days suffered greatly"; "behavior that branded him as common"; "his square plebeian nose"; "a vulgar and objectionable person"; "the unwashed masses"*
- S: (adj) coarse, **common** (of low or inferior quality or value) *"of what coarse metal ye are molded"- Shakespeare; "produced...the common cloths used by the poorer population"*
- S: (adj) coarse, **common**, rough-cut, uncouth, vulgar (lacking refinement or cultivation or taste) *"he had coarse manners but a first-rate mind"; "behavior that branded him as common"; "an untutored and uncouth human being"; "an uncouth soldier--a real tough guy"; "appealing to the vulgar taste for violence"; "the vulgar display of the newly rich"*
- S: (adj) **common** (to be expected; standard) *"common decency"*

WordNet Search - 3.1

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Word to search for: signed Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Verb

- S: (v) sign, subscribe (mark with one's signature; write one's name (on)) *"She signed the letter and sent it off"; "Please sign here"*
- S: (v) sign, ratify (approve and express assent, responsibility, or obligation) *"All parties ratified the peace treaty"; "Have you signed your contract yet?"*
- S: (v) sign (be engaged by a written agreement) *"He signed to play the casino on Dec. 18"; "The soprano signed to sing the new opera"*
- S: (v) sign, contract, sign on, sign up (engage by written agreement) *"They signed two new pitchers for the next season"*
- S: (v) sign, signal, signalize, signalise (communicate silently and non-verbally by signals or signs) *"He signed his disapproval with a dismissive hand gesture"; "The diner signaled the waiters to bring the menu"*
- S: (v) sign (place signs, as along a road) *"sign an intersection"; "This road has been signed"*
- S: (v) sign (communicate in sign language) *"I don't know how to sign, so I could not communicate with my deaf cousin"*
- S: (v) bless, sign (make the sign of the cross over someone in order to call on God for protection; consecrate)

Adjective

- S: (adj) **signed** (having a handwritten signature) *"a signed letter"*
- S: (adj) gestural, sign, **signed**, sign-language (used of the language of the deaf)

WordNet Search - 3.1

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Word to search for: agreement Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **agreement**, understanding (the statement (oral or written) of an exchange of promises) *"they had an agreement that they would not interfere in each other's business"; "there was an understanding between management and the workers"*
- S: (n) **agreement**, correspondence (compatibility of observations) *"there was no agreement between theory and measurement"; "the results of two tests were in correspondence"*
- S: (n) **agreement**, accord (harmony of people's opinions or actions or characters) *"the two parties were in agreement"*
- S: (n) **agreement**, arrangement (the thing arranged or agreed to) *"they made arrangements to meet in Chicago"*
- S: (n) **agreement**, concord (the determination of grammatical inflection on the basis of word relations)
- S: (n) **agreement** (the verbal act of agreeing)

WordNet Search - 3.1

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Word to search for: chill Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **chill**, iciness, gelidity (coldness due to a cold environment)
- S: (n) frisson, shiver, **chill**, quiver, shudder, thrill, tingle (an almost pleasurable sensation of fright) *"a frisson of surprise shot through him"*
- S: (n) **chill**, shivering (a sensation of cold that often marks the start of an infection and the development of a fever)
- S: (n) **chill**, pall (a sudden numbing dread)

Verb

- S: (v) **chill** (depress or discourage) *"The news of the city's surrender chilled the soldiers"*
- S: (v) cool, **chill**, cool down (make cool or cooler) *"Chill the food"*
- S: (v) cool, **chill**, cool down (loose heat) *"The air cooled considerably after the thunderstorm"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: crept Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Verb

- S: (v) crawl, creep (move slowly; in the case of people or animals with the body near the ground) *"The crocodile was crawling along the riverbed"*
- S: (v) sneak, mouse, creep, pussyfoot (to go stealthily or furtively) *"..stead of sneaking around spying on the neighbor's house"*
- S: (v) creep (grow or spread, often in such a way as to cover (a surface)) *"ivy crept over the walls of the university buildings"*
- S: (v) fawn, crawl, creep, cringe, cower, grovel (show submission or fear)

WordNet Search - 3.1

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Word to search for: spine Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) spinal column, vertebral column, **spine**, backbone, back, rachis (the series of vertebrae forming the axis of the skeleton and protecting the spinal cord) *"the fall broke his back"*
- S: (n) spur, **spine**, acantha (any sharply pointed projection)
- S: (n) **spine**, thorn, prickle, pricker, sticker, spikelet (a small sharp-pointed tip resembling a spike on a stem or leaf)
- S: (n) **spine**, backbone (the part of a book's cover that encloses the inner side of the book's pages and that faces outward when the book is shelved) *"the title and author were printed on the spine of the book"*
- S: (n) **spine** (a sharp rigid animal process or appendage; as a porcupine quill or a ridge on a bone or a ray of a fish fin)

WordNet Search - 3.1

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Word to search for: serious Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Adjective

- S: (adj) **serious** (concerned with work or important matters rather than play or trivialities) *"a serious student of history"; "a serious attempt to learn to ski"; "gave me a serious look"; "a serious young man"; "are you serious or joking?"; "Don't be so serious!"*
- S: (adj) **serious** (of great consequence) *"marriage is a serious matter"*
- S: (adj) dangerous, grave, grievous, **serious**, severe, life-threatening (causing fear or anxiety by threatening great harm) *"a dangerous operation"; "a grave situation"; "a grave illness"; "grievous bodily harm"; "a serious wound"; "a serious turn of events"; "a severe case of pneumonia"; "a life-threatening disease"*
- S: (adj) good, **serious** (appealing to the mind) *"good music"; "a serious book"*
- S: (adj) unplayful, **serious**, sober (completely lacking in playfulness)
- S: (adj) **serious** (requiring effort or concentration; complex and not easy to answer or solve) *"raised serious objections to the proposal"; "the plan has a serious flaw"*

WordNet Search - 3.1

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Word to search for: not Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Adverb

- S: (adv) **not**, non (negation of a word or group of words) *"he does not speak French"; "she is not going"; "they are not friends"; "not many"; "not much"; "not at all"*

WordNet Search - 3.1

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Word to search for: husband Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **husband**, hubby, married man (a married man; a woman's partner in marriage)

Verb

- S: (v) conserve, **husband**, economize, economise (use cautiously and frugally) *"I try to economize my spare time"; "conserve your energy for the ascent to the summit"*

WordNet Search - 3.1

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Word to search for: assured Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Verb

- S: (v) guarantee, ensure, insure, assure, secure (make certain of) *"This nest egg will ensure a nice retirement for us"; "Preparation will guarantee success!"*
- S: (v) assure, tell (inform positively and with certainty and confidence) *"I tell you that man is a crook!"*
- S: (v) assure (assure somebody of the truth of something with the intention of giving the listener confidence) *"I assured him that traveling to Cambodia was safe"*
- S: (v) see, check, insure, see to it, ensure, control, ascertain, assure (be careful or certain to do something; make certain of something) *"He verified that the valves were closed"; "See that the curtains are closed"; "control the quality of the product"*
- S: (v) reassure, assure (cause to feel sure; give reassurance to) *"The airline tried to reassure the customers that the planes were safe"*
- S: (v) promise, assure (make a promise or commitment)

Adjective

- S: (adj) **assured** (marked by assurance; exhibiting confidence) *"she paints with an assured hand"*
- S: (adj) **assured** (characterized by certainty or security) *"a tiny but assured income"; "we can never have completely assured lives"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: left Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **left** (location near or direction toward the left side; i.e. the side to the north when a person or object faces east) *"she stood on the left"*
- S: (n) **left**, left wing (those who support varying degrees of social or political or economic change designed to promote the public welfare)
- S: (n) **left**, left hand (the hand that is on the left side of the body) *"jab with your left"*
- S: (n) left field, leftfield, **left** (the piece of ground in the outfield on the catcher's left) *"the batter flied out to left"*
- S: (n) **left** (a turn toward the side of the body that is on the north when the person is facing east) *"take a left at the corner"*

Verb

- S: (v) leave, go forth, go away (go away from a place) *"At what time does your train leave?"; "She didn't leave until midnight"; "The ship leaves at midnight"*
- S: (v) leave (go and leave behind, either intentionally or by neglect or forgetfulness) *"She left a mess when she moved out"; "His good luck finally left him"; "her husband left her after 20 years of marriage"; "she wept thinking she had been left behind"*
- S: (v) leave (act or be so as to become in a specified state) *"The inflation left them penniless"; "The president's remarks left us speechless"*
- S: (v) leave, leave alone, leave behind, let alone (leave unchanged or undisturbed or refrain from taking) *"leave it as is"; "leave the young fawn alone"; "leave the flowers that you see in the park behind"*
- S: (v) exit, go out, get out, leave (move out of or depart from) *"leave the room"; "the fugitive has left the country"*
- S: (v) leave, allow for, allow, provide (make a possibility or provide opportunity for; permit to be attainable or cause to remain) *"This leaves no room for improvement"; "The evidence allows only one conclusion"; "allow for mistakes"; "leave lots of time for the trip"; "This procedure provides for lots of leeway"*
- S: (v) leave, result, lead (produce as a result or residue) *"The water left a mark on the silk dress"; "Her blood left a stain on the napkin"*
- S: (v) leave, depart, pull up stakes (remove oneself from an association with or participation in) *"She wants to leave"; "The teenager left home"; "She left her position with the Red Cross"; "He left the Senate after two terms"; "after 20 years with the same company, she pulled up stakes"*
- S: (v) entrust, leave (put into the care or protection of someone) *"He left the decision to his deputy"; "leave your child in the nurse's care"*
- S: (v) bequeath, will, leave (leave or give by will after one's death) *"My aunt bequeathed me all her jewelry"; "My grandfather left me his entire estate"*
- S: (v) leave (have left or have as a remainder) *"That left the four of us"; "19 minus 8 leaves 11"*
- S: (v) leave, leave behind (be survived by after one's death) *"He left six children"; "At her death, she left behind her husband and 11 cats"*
- S: (v) impart, leave, give, pass on (transmit (knowledge or skills)) *"give a secret to the Russians"; "leave your name and address here"; "impart a new skill to the*

- S: (v) forget, leave (leave behind unintentionally) *"I forgot my umbrella in the restaurant"; "I left my keys inside the car and locked the doors"*

Adjective

- S: (adj) **left** (being or located on or directed toward the side of the body to the west when facing north) *"my left hand"; "left center field"; "the left bank of a river is bank on your left side when you are facing downstream"*
- S: (adj) leftover, left over, **left**, odd, remaining, unexpended (not used up) *"leftover meatloaf"; "she had a little money left over so she went to a movie"; "some odd dollars left"; "saved the remaining sandwiches for supper"; "unexpended provisions"*
- S: (adj) **left**, left-hand (intended for the left hand) *"I rarely lose a left-hand glove"*
- S: (adj) **left** (of or belonging to the political or intellectual left)

Adverb

- S: (adv) **left** (toward or on the left; also used figuratively) *"he looked right and left"; "the political party has moved left"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: deposit Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **deposit**, sedimentation, alluviation (the phenomenon of sediment or gravel accumulating)
- S: (n) sediment, **deposit** (matter that has been deposited by some natural process)
- S: (n) deposition, **deposit** (the natural process of laying down a deposit of something)
- S: (n) **deposit**, bank deposit (money deposited in a bank or some similar institution)
- S: (n) down payment, **deposit** (a partial payment made at the time of purchase; the balance to be paid later)
- S: (n) **deposit** (money given as security for an article acquired for temporary use) *"his deposit was refunded when he returned the car"*
- S: (n) **deposit** (a payment given as a guarantee that an obligation will be met)
- S: (n) depository, **deposit**, depositary, repository (a facility where things can be deposited for storage or safekeeping)
- S: (n) **deposit**, deposition (the act of putting something somewhere)

Verb

- S: (v) lodge, wedge, stick, **deposit** (put, fix, force, or implant) *"lodge a bullet in the table"; "stick your thumb in the crack"*
- S: (v) **deposit**, bank (put into a bank account) *"She deposits her paycheck every month"*
- S: (v) situate, fix, posit, **deposit** (put (something somewhere) firmly) *"She posited her hand on his shoulder"; "deposit the suitcase on the bench"; "fix your eyes on this spot"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: cash Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **cash**, hard cash, hard currency (money in the form of bills or coins) *"there is a desperate shortage of hard cash"*
- S: (n) **cash**, immediate payment (prompt payment for goods or services in currency or by check)
- S: (n) **Cash**, Johnny Cash, John Cash (United States country music singer and songwriter (1932-2003))

Verb

- S: (v) **cash**, cash in (exchange for cash) *"I cashed the check as soon as it arrived in the mail"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: Bank Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Noun

- S: (n) **bank** (sloping land (especially the slope beside a body of water)) *"they pulled the canoe up on the bank"; "he sat on the bank of the river and watched the currents"*
- S: (n) depository financial institution, **bank**, banking concern, banking company (a financial institution that accepts deposits and channels the money into lending activities) *"he cashed a check at the bank"; "that bank holds the mortgage on my home"*
- S: (n) **bank** (a long ridge or pile) *"a huge bank of earth"*
- S: (n) **bank** (an arrangement of similar objects in a row or in tiers) *"he operated a bank of switches"*
- S: (n) **bank** (a supply or stock held in reserve for future use (especially in emergencies))
- S: (n) **bank** (the funds held by a gambling house or the dealer in some gambling games) *"he tried to break the bank at Monte Carlo"*
- S: (n) **bank**, cant, camber (a slope in the turn of a road or track; the outside is higher than the inside in order to reduce the effects of centrifugal force)
- S: (n) savings bank, coin bank, money box, **bank** (a container (usually with a slot in the top) for keeping money at home) *"the coin bank was empty"*
- S: (n) **bank**, bank building (a building in which the business of banking transacted) *"the bank is on the corner of Nassau and Witherspoon"*
- S: (n) **bank** (a flight maneuver; aircraft tips laterally about its longitudinal axis (especially in turning)) *"the plane went into a steep bank"*

Verb

- S: (v) **bank** (tip laterally) *"the pilot had to bank the aircraft"*
- S: (v) **bank** (enclose with a bank) *"bank roads"*
- S: (v) **bank** (do business with a bank or keep an account at a bank) *"Where do you bank in this town?"*
- S: (v) **bank** (act as the banker in a game or in gambling)
- S: (v) **bank** (be in the banking business)
- S: (v) deposit, **bank** (put into a bank account) *"She deposits her paycheck every month"*
- S: (v) **bank** (cover with ashes so to control the rate of burning) *"bank a fire"*
- S: (v) count, bet, depend, swear, rely, **bank**, look, calculate, reckon (have faith or confidence in) *"you can count on me to help you any time"; "Look to your friends for support"; "You can bet on that!"; "Depend on your family in times of crisis"*

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: is Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

WordNet Search - 3.1

- WordNet home page - Glossary - Help

Word to search for: about Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (gloss) "an example sentence"

Adjective

- S: (adj) **about**, astir (on the move) *"up and about"; "the whole town was astir over the incident"*

Adverb

- S: (adv) approximately, **about**, close to, just about, some, roughly, more or less, around, or so ((of quantities) imprecise but fairly close to correct) *"lasted approximately an hour"; "in just about a minute"; "he's about 30 years old"; "I've had about all I can stand"; "we meet about once a month"; "some forty people came"; "weighs around a hundred pounds"; "roughly $3,000"; "holds 3 gallons, more or less"; "20 or so people were at the party"*
- S: (adv) **about**, around (all around or on all sides) *"dirty clothes lying around (or about)"; "let's look about for help"; "There were trees growing all around"; "she looked around her"*
- S: (adv) **about**, around (in the area or vicinity) *"a few spectators standing about"; "hanging around"; "waited around for the next flight"*
- S: (adv) **about**, around (used of movement to or among many different places or in no particular direction) *"wandering about with no place to go"; "people were rushing about"; "news gets around (or about)"; "traveled around in Asia"; "he needs advice from someone who's been around"; "she sleeps around"*
- S: (adv) **about**, around (in or to a reversed position or direction) *"about face"; "suddenly she turned around"*
- S: (adv) **about** (in rotation or succession) *"turn about is fair play"*
- S: (adv) **about**, almost, most, nearly, near, nigh, virtually, well-nigh ((of actions or states) slightly short of or not quite accomplished; all but) *"the job is (just) about done"; "the baby was almost asleep when the alarm sounded"; "we're almost finished"; "the car all but ran her down"; "he nearly fainted"; "talked for nigh onto 2 hours"; "the recording is well-nigh perfect"; "virtually all the parties signed the contract"; "I was near exhausted by the run"; "most everyone agrees"*

2. Word Sense Disambiguation

In the cold weather, they started to the city. They were least worried protecting themselves against the common cold. After she signed the agreement, a cold chill crept up her spine. "Chill, its not that serious," her husband assured and left to deposit cash at the bank.

cold: N:3, JJ:13
weather: N:1, V:4, JJ:1
started: V:14
city: N:3
were: V:13
least: N:1, JJ:9, RBS:2
worried: V:6, JJ:2
protecting: V:2, JJ:1
common: N:1, JJ:9
signed: V:8 JJ:2
agreement: N:6
chill: N:4 V:3 ("relax" not listed)
crept: V:4
spine: N:5
not: RB:1
serious: JJ:6

husband: N:1 V:1
assured: V:6 JJ:2
left: N:5 V:14 JJ:4 RB:1
deposit: N:9 V:3
cash: N:2 NP:1 V:1
bank: N:10 V:8

11.22 2.2

① In the cold weather, they started to the city.

cold: 16, weather: 6, started: 14, city: 3
$16 \times 6 \times 14 \times 3 = 4{,}032$

② They were least worried protecting themselves against the common cold.

were: 13, least: 12, worried: 8, protecting: 3, common: 10, cold: 16
$13 \times 12 \times 8 \times 3 \times 10 \times 16 = 599{,}040$

③ After she signed the agreement, a cold chill crept up her spine.

signed: 10, agreement: 6, cold: 16, chill: 7, crept: 4, spine: 5

$10 \times 6 \times 16 \times 7 \times 4 \times 5 = 134,400$

... with "chill" also meaning "relax"

$10 \times 6 \times 16 \times 8 \times 4 \times 5 = 153,600$

④ "Chill, its not that serious," her husband assured and left to deposit cash at the bank.

chill: 7, not: 1, serious: 6, husband: 2, assured: 8, left: 24, deposit: 12, cash: 4, bank: 18

$7 \times 1 \times 6 \times 2 \times 8 \times 24 \times 12 \times 4 \times 18 = 13,934,592$

... with "chill" also meaning "relax," as used here,

$8 \times 1 \times 6 \times 2 \times 8 \times 24 \times 12 \times 4 \times 18 = 15,925,248$

11:41

19 minutes

... with "is" = 181,119,696 ; 207,028,224 (x13, V only)

222,953,472 ; 254,803,968 (x16, V+N)

Note: "its" is misspelled, should be "it's", i.e., "it is".

is: N: 3 V: 13 (the noun is "i" plural)

7*1*6*2*8*24*12*4*18	13,934,592
ans*13	181,149,696
8*1*6*2*8*24*12*4*18	15,925,248
ans*13	207,028,224
(13,934,592)*16	222,953,472
(15,925,248)*16	254,803,968