

Project 1

Chance and Data: Making Decisions

WHO WROTE THIS?

Sometimes there is dispute about who is the author of a book, letter, article, etc. One of the ways that can be used to help resolve these disputes is to do a numerical analysis of the work in question and then compare the results with known works by the competing authors. Every author has his or her own writing style, and different works by the same author are likely to have similar results when comparing statistics of word length, sentence length, paragraph length, etc. This technique is useful even when it is not possible to understand the language the works are written in.

Attached is an extract from a document by an unknown author. It is a 19th century document and is thought to have been written by one of Emily Bronte, Marcus Clark or Charles Dickens.

Problem

Decide which of the three authors is most likely to be the author of the unknown passage.

(Note that you must submit all evidence of your working so all outcomes of the Common Assessment Framework can be assessed.)

Unknown passage:

The last English Judge, I believe, who gave expression to a public and judicial opinion in favour of the punishment of Death, is Mr. Justice Coleridge, who, in charging the Grand Jury at Hertford last year, took occasion to lament the presence of serious crimes in the calendar, and to say that he feared that they were referable to the comparative infrequency of Capital Punishment.

It is not incompatible with the utmost deference and respect for an authority so eminent, to say that, in this, Mr. Justice Coleridge was not supported by facts, but quite the reverse. He went out of his way to found a general assumption on certain very limited and partial grounds, and even on those grounds was wrong. For among the few crimes which he instanced, murder stood prominently forth. Now persons found guilty of murder are more certainly and unsparingly hanged at this time, as the Parliamentary Returns demonstrate, than such criminals ever were. So how can the decline of public executions affect that class of crimes? As to persons committing murder, and yet not found guilty of it by juries, they escape solely because there are many public executions--not because there are none or few.

But when I submit that a criminal judge is an excellent witness against Capital Punishment, but a bad witness in its favour, I do so on more broad and general grounds than apply to this error in fact and deduction (so I presume to consider it) on the part of the distinguished judge in question. And they are grounds which do not apply offensively to judges, as a class; than whom there are no authorities in England so deserving of general respect and confidence, or so possessed of it; but which apply alike to all men in their several degrees and pursuits.

It is certain that men contract a general liking for those things which they have studied at great cost of time and intellect, and their proficiency in which has led to their becoming distinguished and successful. It is certain that out of this feeling arises, not only that passive blindness to their defects of which the example given by my Lord Tenterden was quoted in the last letter, but an active disposition to advocate and defend them. If it were otherwise; if it were not for this spirit of interest and partisanship; no single pursuit could have that attraction for its votaries which most pursuits in course of time establish. Thus legal authorities are usually jealous of innovations on legal principles. Thus it is described of the lawyer in the Introductory Discourse to the Description of Utopia, that he said of a proposal against Capital Punishment, "'this could never be so established in England but that it must needs bring the weal-public into great jeopardy and hazard', and as he was thus saying, he shook his head, and made a wry mouth, and so he held his peace". Thus the Recorder of London, in 1811, objected to "the capital part being taken off" from the offence of picking pockets. Thus the Lord Chancellor, in 1813, objected to the removal of the penalty of death from the offence of stealing to the amount of five shillings from a shop. Thus, Lord Ellenborough, in 1820, anticipated the worst effects from there being no punishment of death for stealing five shillings worth of wet linen from a bleaching ground. Thus the Solicitor General, in 1830, advocated the punishment of death for forgery, and "the satisfaction of thinking" in the teeth of mountains of evidence from bankers and other injured parties (one thousand bankers alone!) "that he was deterring persons from the commission of crime, by the severity of the law". Thus, Mr. Justice Coleridge delivered his charge at Hertford in 1845. Thus there were in the criminal code of England, in 1790, one hundred and sixty crimes punishable with death. Thus the lawyer has said, again and again, in his generation, that any change in such a state of things "must needs bring the weal-public into jeopardy and hazard". And thus he has, all through the dismal history, "shook his head, and made a wry mouth, and held his peace". Except--a glorious exception!--when such lawyers as Bacon, More, Blackstone, Romilly, and--let us ever gratefully remember--in later times Mr. Basil Montagu, have striven, each in his day, within the utmost limits of the endurance of the mistaken feeling of the people or the legislature of the time, to champion and maintain the truth.

There is another and a stronger reason still, why a criminal judge is a bad witness in favour of the punishment of Death. He is a chief actor in the terrible drama of a trial, where the life or death of a fellow creature is at issue. No one who has seen such a trial can fail to know, or can ever forget, its intense interest. I care not how painful this interest is to the good, wise judge upon the bench. I admit its painful nature, and the judge's goodness and wisdom to the fullest extent--but I submit that his prominent share in the excitement of such a trial, and the dread mystery involved, has a tendency to bewilder and confuse the judge upon the general subject of that penalty. I know the solemn pause before the verdict, the bush and stifling of the fever in the court, the solitary figure brought back to the bar, and standing there, observed of all the outstretched heads and gleaming eyes, to be next minute stricken dead as one may say, among them. I know the thrill that goes round when the black cap is put on, and how there will be shrieks among the women, and a taking out of some one in a swoon; and, when the judge's faltering voice delivers sentence, how awfully the prisoner and he confront each other; two mere men, destined one day, however far removed from one another at this time, to stand alike as suppliants at the bar of God. I know all this, I can imagine what the office of the judge costs in this execution of it; but I say that in these strong sensations he is lost, and is unable to abstract the penalty as a preventive or example, from an experience of it, and from associations surrounding it, which are and can be, only his, and his alone.

Letters: 4847
Words: 1078
Sentences: 34
Paragraphs: 4

Word Length	Number of words	Words per Sentence	Number of sentences
1	37	1 - 10	2
2	214	11 - 20	6
3	235	21 - 30	12
4	159	31 - 40	3
5	119	41 - 50	5
6	75	51 - 60	3
7	95	61 - 70	2
8	57	71 - 80	1
9	34		
10	27		
11	16		
12	7		
13	3		

Reference passages

Passage 1 (Emily Bronte):

While leading the way upstairs, she recommended that I should hide the candle, and not make a noise; for her master had an odd notion about the chamber she would put me in, and never let anybody lodge there willingly. I asked the reason. She did not know, she answered: she had only lived there a year or two; and they had so many queer goings on, she could not begin to be curious.

Too stupefied to be curious myself, I fastened my door and glanced round for the bed. The whole furniture consisted of a chair, a clothes-press, and a large oak case, with squares cut out near the top resembling coach windows. Having approached this structure, I looked inside, and perceived it to be a singular sort of old-fashioned couch, very conveniently designed to obviate the necessity for every member of the family having a room to himself. In fact, it formed a little closet, and the ledge of a window, which it enclosed, served as a table. I slid back the panelled sides, got in with my light, pulled them together again, and felt secure against the vigilance of Heathcliff, and every one else.

The ledge, where I placed my candle, had a few mildewed books piled up in one corner; and it was covered with writing scratched on the paint. This writing, however, was nothing but a name repeated in all kinds of characters, large and small - CATHERINE EARNSHAW, here and there varied to CATHERINE HEATHCLIFF, and then again to CATHERINE LINTON.

In vapid listlessness I leant my head against the window, and continued spelling over Catherine Earnshaw - Heathcliff - Linton, till my eyes closed; but they had not rested five minutes when a glare of white letters started from the dark, as vivid as spectres - the air swarmed with Catherines; and rousing myself to dispel the obtrusive name, I discovered my candle-wick reclining on one of the antique volumes, and perfuming the place with an odour of roasted calf-skin. I snuffed it off, and, very ill at ease under the influence of cold and lingering nausea, sat up and spread open the injured tome on my knee. It was a Testament, in lean type, and smelling dreadfully musty: a fly-leaf bore the inscription - 'Catherine Earnshaw, her book,' and a date some quarter of a century back. I shut it, and took up another and another, till I had examined all. Catherine's library was select, and its state of dilapidation proved it to have been well used, though not altogether for a legitimate purpose: scarcely one chapter had escaped, a pen-and-ink commentary - at least the appearance of one - covering every morsel of blank that the printer had left. Some were detached sentences; other parts took the form of a regular diary, scrawled in an unformed, childish hand. At the top of an extra page (quite a treasure, probably, when first lighted on) I was greatly amused to behold an excellent caricature of my friend Joseph, - rudely, yet powerfully sketched. An immediate interest kindled within me for the unknown Catherine, and I began forthwith to decipher her faded hieroglyphics.

'An awful Sunday,' commenced the paragraph beneath. 'I wish my father were back again. Hindley is a detestable substitute - his conduct to Heathcliff is atrocious - H. and I are going to rebel - we took our initiatory step this evening.

'All day had been flooding with rain; we could not go to church, so Joseph must needs get up a congregation in the garret; and, while Hindley and his wife basked downstairs before a comfortable fire - doing anything but reading their Bibles, I'll answer for it - Heathcliff, myself, and the unhappy ploughboy were commanded to take our prayer-books, and mount: we were ranged in a row, on a sack of corn, groaning and shivering, and hoping that Joseph would shiver too, so that he might give us a short homily for his own sake. A vain idea! The service lasted precisely three hours; and yet my brother had the face to exclaim, when he saw us descending, "What, done already?" On Sunday evenings we used to be permitted to play, if we did not make much noise; now a mere titter is sufficient to send us into corners.

"You forget you have a master here," says the tyrant. "I'll demolish the first who puts me out of temper! I insist on perfect sobriety and silence. Oh, boy! was that you? Frances darling, pull his hair as you go by: I heard him snap his fingers." Frances pulled his hair heartily, and then went and seated herself on her husband's knee, and there they were, like two babies, kissing and talking nonsense by the hour - foolish palaver that we should be ashamed of. We made ourselves as snug as our means allowed in the arch of the dresser. I had just fastened our pinafores together, and hung them up for a curtain, when in comes Joseph, on an errand from the stables. He tears down my handiwork, boxes my ears, and croaks:

"T' maister nobbut just buried, and Sabbath not o'ered, und t' sound o' t' gospel still i' yer lugs, and ye darr be laiking! Shame on ye! sit ye down, ill childer! there's good books enough if ye'll read 'em: sit ye down, and think o' yer sowls!"

'Saying this, he compelled us so to square our positions that we might receive from the far-off fire a dull ray to show us the text of the lumber he thrust upon us. I could not bear the employment. I took my dingy volume by the scroop, and hurled it into the dog-kennel, vowing I hated a good book. Heathcliff kicked his to the same place. Then there was a hubbub!

"Maister Hindley!" shouted our chaplain. "Maister, coom hither! Miss Cathy's riven th' back off 'Th' Helmet o' Salvation,' un' Heathcliff's pawsed his fit into t' first part o' 'T' Brooad Way to Destruction!' It's fair flaysome that ye let 'em go on this gait. Ech! th' owd man wad ha' laced 'em properly - but he's goan!"

'Hindley hurried up from his paradise on the hearth, and seizing one of us by the collar, and the other by the arm, hurled both into the back-kitchen; where, Joseph asseverated, "owd Nick would fetch us as sure as we were living; and, so comforted, we each sought a separate nook to await his advent. I reached this book, and a pot of ink from a shelf, and pushed the house-door ajar to give me light, and I have got the time on with writing for twenty minutes; but my companion is impatient, and proposes that we should appropriate the dairywoman's cloak, and have a scamper on the moors, under its shelter. A pleasant suggestion - and then, if the surly old man come in, he may believe his prophecy verified - we cannot be damper, or colder, in the rain than we are here.'

Letters: 5066

Words: 1171

Sentences: 55

Paragraphs: 11

Word Length	Number of words
1	73
2	201
3	264
4	192
5	111
6	109
7	89
8	48
9	44
10	27
11	8
12	4
13	1

Words per Sentence	Number of sentences
1 - 10	18
11 - 20	13
21 - 30	12
31 - 40	7
41 - 50	1
51 - 60	2
61 - 70	0
71 - 80	1
81 - 90	0
91 - 100	1

Passage 2 (Charles Dickens):

The writer of these humble lines being a Waiter, and having come of a family of Waiters, and owning at the present time five brothers who are all Waiters, and likewise an only sister who is a Waitress, would wish to offer a few words respecting his calling; first having the pleasure of hereby in a friendly manner offering the Dedication of the same unto Joseph, much respected Head Waiter at the Slamjam Coffee-house, London, E.C., than which a individual more eminently deserving of the name of man, or a more amenable honour to his own head and heart, whether considered in the light of a Waiter or regarded as a human being, do not exist.

In case confusion should arise in the public mind (which it is open to confusion on many subjects) respecting what is meant or implied by the term Waiter, the present humble lines would wish to offer an explanation. It may not be generally known that the person as goes out to wait is not a Waiter. It may not be generally known that the hand as is called in extra, at the Freemasons' Tavern, or the London, or the Albion, or otherwise, is not a Waiter. Such hands may be took on for Public Dinners by the bushel (and you may know them by their breathing with difficulty when in attendance, and taking away the bottle ere yet it is half out); but such are not Waiters. For you cannot lay down the tailoring, or the shoemaking, or the brokering, or the green-grocery, or the pictorial-periodicalling, or the second-hand wardrobe, or the small fancy businesses,—you cannot lay down those lines of life at your will and pleasure by the half-day or evening, and take up Waitering. You may suppose you can, but you cannot; or you may go so far as to say you do, but you do not. Nor yet can you lay down the gentleman's-service when stimulated by prolonged incompatibility on the part of Cooks (and here it may be remarked that Cooking and Incompatibility will be mostly found united), and take up Waitering. It has been ascertained that what a gentleman will sit meek under, at home, he will not bear out of doors, at the Slamjam or any similar establishment. Then, what is the inference to be drawn respecting true Waitering? You must be bred to it. You must be born to it.

Would you know how born to it, Fair Reader,—if of the adorable female sex? Then learn from the biographical experience of one that is a Waiter in the sixty-first year of his age.

You were conveyed,—ere yet your dawning powers were otherwise developed than to harbour vacancy in your inside,—you were conveyed, by surreptitious means, into a pantry adjoining the Admiral Nelson, Civic and General Dining-Rooms, there to receive by stealth that healthful sustenance which is the pride and boast of the British female constitution. Your mother was married to your father (himself a distant Waiter) in the profoundest secrecy; for a Waitress known to be married would ruin the best of businesses,—it is the same as on the stage. Hence your being smuggled into the pantry, and that—to add to the infliction—by an unwilling grandmother. Under the combined influence of the smells of roast and boiled, and soup, and gas, and malt liquors, you

partook of your earliest nourishment; your unwilling grandmother sitting prepared to catch you when your mother was called and dropped you; your grandmother's shawl ever ready to stifle your natural complainings; your innocent mind surrounded by uncongenial cruets, dirty plates, dish-covers, and cold gravy; your mother calling down the pipe for veals and porks, instead of soothing you with nursery rhymes. Under these untoward circumstances you were early weaned. Your unwilling grandmother, ever growing more unwilling as your food assimilated less, then contracted habits of shaking you till your system curdled, and your food would not assimilate at all. At length she was no longer spared, and could have been thankfully spared much sooner. When your brothers began to appear in succession, your mother retired, left off her smart dressing (she had previously been a smart dresser), and her dark ringlets (which had previously been flowing), and haunted your father late of nights, lying in wait for him, through all weathers, up the shabby court which led to the back door of the Royal Old Dust-Bin (said to have been so named by George the Fourth), where your father was Head. But the Dust-Bin was going down then, and your father took but little,—excepting from a liquid point of view. Your mother's object in those visits was of a house-keeping character, and you was set on to whistle your father out. Sometimes he came out, but generally not. Come or not come, however, all that part of his existence which was unconnected with open Waitering was kept a close secret, and was acknowledged by your mother to be a close secret, and you and your mother flitted about the court, close secrets both of you, and would scarcely have confessed under torture that you know your father, or that your father had any name than Dick (which wasn't his name, though he was never known by any other), or that he had kith or kin or chick or child. Perhaps the attraction of this mystery, combined with your father's having a damp compartment, to himself, behind a leaky cistern, at the Dust-Bin,—a sort of a cellar compartment, with a sink in it, and a smell, and a plate-rack, and a bottle-rack, and three windows that didn't match each other or anything else, and no daylight,—caused your young mind to feel convinced that you must grow up to be a Waiter too; but you did feel convinced of it, and so did all your brothers, down to your sister. Every one of you felt convinced that you was born to the Waitering. At this stage of your career, what was your feelings one day when your father came home to your mother in open broad daylight,—of itself an act of Madness on the part of a Waiter,—and took to his bed (leastwise, your mother and family's bed), with the statement that his eyes were devilled kidneys. Physicians being in vain, your father expired, after repeating at intervals for a day and a night, when gleams of reason and old business fitfully illuminated his being, "Two and two is five. And three is sixpence." Interred in the parochial department of the neighbouring churchyard, and accompanied to the grave by as many Waiters of long standing as could spare the morning time from their soiled glasses (namely, one), your bereaved form was attired in a white neckankecher, and you was took on from motives of benevolence at The George and Gridiron, theatrical and supper. Here, supporting nature on what you found in the plates (which was as it happened, and but too often thoughtlessly, immersed in mustard), and on what you found in the glasses (which rarely went beyond driblets and lemon), by night you dropped asleep standing, till you was cuffed awake, and by day was set to polishing every individual article in the coffee-room. Your couch being sawdust; your counterpane being ashes of cigars. Here, frequently hiding a heavy heart under the smart tie of your white neckankecher (or correctly speaking lower down and more to the left), you picked up the rudiments of knowledge from an extra, by the name of Bishops, and by calling plate-washer, and gradually elevating your mind with chalk on the back of the corner-box partition, until such time as you used the inkstand when it was out of hand, attained to manhood, and to be the Waiter that you find yourself.

I could wish here to offer a few respectful words on behalf of the calling so long the calling of myself and family, and the public interest in which is but too often very limited. We are not generally understood. No, we are not. Allowance enough is not made for us. For, say that we ever show a little drooping listlessness of spirits, or what might be termed indifference or apathy. Put it to yourself what would your own state of mind be, if you was one of an enormous family every member of which except you was always greedy, and in a hurry. Put it to yourself that you was regularly replete with animal food at the slack hours of one in the day and again at nine p.m., and that the repleter you was, the more voracious all your fellow-creatures came in. Put it to yourself that it was your business, when your digestion was well on, to take a personal interest and sympathy in a hundred gentlemen fresh and fresh (say, for the sake of argument, only a hundred), whose imaginations was given up to grease and fat and gravy and melted butter, and abandoned to questioning you about cuts of this, and dishes of that,—each of 'em going on as if him and you and the bill of fare was alone in the world. Then look what you are expected to know. You are never out, but they seem to think you regularly attend everywhere. "What's this, Christopher, that I hear about the smashed Excursion Train? How are they doing at the Italian Opera, Christopher?" "Christopher, what are the real particulars of this business at the Yorkshire Bank?" Similarly a ministry gives me more trouble than it gives the Queen. As to Lord Palmerston, the constant and wearing connection into which I have been brought with his lordship during the last few years is deserving of a pension. Then look at the Hypocrites we are made, and the lies (white, I hope) that are forced upon us! Why must a sedentary-pursuited Waiter be considered to be a judge of horseflesh, and to have a most tremendous interest in horse-training and racing? Yet it would be half our little incomes out of our pockets if we didn't take on to have those sporting tastes. It is the same (inconceivable why!) with Farming. Shooting, equally so. I am sure that so regular as the months of August, September, and October come round, I am ashamed of myself in my own private bosom for the way in which I make believe to care whether or not the grouse is strong on the wing (much their wings, or drumsticks either, signifies to me, uncooked!), and whether the partridges is plentiful among the turnips, and whether the pheasants is shy or bold, or anything else you please to mention. Yet you may see me, or any other Waiter of my standing, holding on by the back of the box, and leaning over a gentleman with his purse out and his bill before him, discussing these points in a confidential tone of voice, as if my happiness in life entirely depended on 'em.

Characters: 8215

Words: 1859

Sentences: 61

Paragraphs: 5

Word Length	Number of words	Words per Sentence			Number of sentences
1	55	1	-	10	15
2	354	11	-	20	14
3	428	21	-	30	11
4	337	31	-	40	6
5	186	41	-	50	1
6	161	51	-	60	6
7	102	61	-	70	1
8	78	71	-	80	1
9	73	81	-	90	3
10	42	91	-	100	2
11	21	101	-	110	0
12	13	111	-	120	1
13	6				
14	1				

Passage 3 (Marcus Clark):

In the breathless stillness of a tropical afternoon, when the air was hot and heavy, and the sky brazen and cloudless, the shadow of the Malabar lay solitary on the surface of the glittering sea.

The sun--who rose on the left hand every morning a blazing ball, to move slowly through the unbearable blue, until he sank fiery red in mingling glories of sky and ocean on the right hand--had just got low enough to peep beneath the awning that covered the poop-deck, and awaken a young man, in an undress military uniform, who was dozing on a coil of rope.

"Hang it!" said he, rising and stretching himself, with the weary sigh of a man who has nothing to do, "I must have been asleep"; and then, holding by a stay, he turned about and looked down into the waist of the ship.

Save for the man at the wheel and the guard at the quarter-railing, he was alone on the deck. A few birds flew round about the vessel, and seemed to pass under her stern windows only to appear again at her bows. A lazy albatross, with the white water flashing from his wings, rose with a dabbling sound to leeward, and in the place where he had been glided the hideous fin of a silently-swimming shark. The seams of the well-scrubbed deck were sticky with melted pitch, and the brass plate of the compass-case sparkled in the sun like a jewel. There was no breeze, and as the clumsy ship rolled and lurched on the heaving sea, her idle sails flapped against her masts with a regularly recurring noise, and her bowsprit would seem to rise higher with the water's swell, to dip again with a jerk that made each rope tremble and tauten. On the forecassle, some half-dozen soldiers, in all varieties of undress, were playing at cards, smoking, or watching the fishing-lines hanging over the catheads.

So far the appearance of the vessel differed in no wise from that of an ordinary transport. But in the waist a curious sight presented itself. It was as though one had built a cattle-pen there. At the foot of the foremast, and at the quarter-deck, a strong barricade, loop-holed and furnished with doors for ingress and egress, ran across the deck from bulwark to bulwark. Outside this cattle-pen an armed sentry stood on guard; inside, standing, sitting, or walking monotonously, within range of the shining barrels in the arm chest on the poop, were some sixty men and boys, dressed in uniform grey. The men and boys were prisoners of the Crown, and the cattle-pen was their exercise ground. Their prison was down the main hatchway, on the 'tween decks, and the barricade, continued down, made its side walls.

It was the fag end of the two hours' exercise graciously permitted each afternoon by His Majesty King George the Fourth to prisoners of the Crown, and the prisoners of the Crown were enjoying themselves. It was not, perhaps, so pleasant as under the awning on the poop-deck, but that sacred shade was only for such great men as the captain and his officers, Surgeon Pine, Lieutenant Maurice Frere, and, most important personages of all, Captain Vickers and his wife.

That the convict leaning against the bulwarks would like to have been able to get rid of his enemy the sun for a moment, was probable enough. His companions, sitting on the combings of the main-hatch, or crouched in careless fashion on the shady side of the barricade, were laughing and talking, with blasphemous and obscene merriment hideous to contemplate; but he, with cap pulled over his brows, and hands thrust into the pockets of his coarse grey garments, held aloof from their dismal joviality.

The sun poured his hottest rays on his head unheeded, and though every cranny and seam in the deck sweltered hot pitch under the fierce heat, the man stood there, motionless and morose, staring at the sleepy sea. He had stood thus, in one place or another, ever since the groaning vessel had escaped from the rollers of the Bay of Biscay, and the miserable hundred and eighty creatures among whom he was classed had been freed from their irons, and allowed to sniff fresh air twice a day.

The low-browed, coarse-featured ruffians grouped about the deck cast many a leer of contempt at the solitary figure, but their remarks were confined to gestures only. There are degrees in crime, and Rufus Dawes, the convicted felon, who had but escaped the gallows to toil for all his life in irons, was a man of mark. He had been tried for the robbery and murder of Lord Bellasis. The friendless vagabond's lame story of finding on the Heath a dying man would not have availed him, but for the curious fact sworn to by the landlord of the Spaniards' Inn, that the murdered nobleman had shaken his head when asked if the prisoner was his assassin. The vagabond was acquitted of the murder, but condemned to death for the robbery, and London, who took some interest in the trial, considered him fortunate when his sentence was commuted to transportation for life.

It was customary on board these floating prisons to keep each man's crime a secret from his fellows, so that if he chose, and the caprice of his gaolers allowed him, he could lead a new life in his adopted home, without being taunted with his former misdeeds. But, like other excellent devices, the expedient was only a nominal one, and few out of the doomed hundred and eighty were ignorant of the offence which their companions had committed. The more guilty boasted of their superiority in vice; the petty

criminals swore that their guilt was blacker than it appeared. Moreover, a deed so bloodthirsty and a respite so unexpected, had invested the name of Rufus Dawes with a grim distinction, which his superior mental abilities, no less than his haughty temper and powerful frame, combined to support. A young man of two-and-twenty owning to no friends, and existing among them but by the fact of his criminality, he was respected and admired. The vilest of all the vile horde penned between decks, if they laughed at his "fine airs" behind his back, cringed and submitted when they met him face-to-face--for in a convict ship the greatest villain is the greatest hero, and the only nobility acknowledged by that hideous commonwealth is that Order of the Halter which is conferred by the hand of the hangman.

The young man on the poop caught sight of the tall figure leaning against the bulwarks, and it gave him an excuse to break the monotony of his employment.

"Here, you!" he called with an oath, "get out of the gangway! "Rufus Dawes was not in the gangway--was, in fact, a good two feet from it, but at the sound of Lieutenant Frere's voice he started, and went obediently towards the hatchway.

"Touch your hat, you dog!" cries Frere, coming to the quarter-railing. "Touch your damned hat! Do you hear?"

Rufus Dawes touched his cap, saluting in half military fashion. "I'll make some of you fellows smart, if you don't have a care," went on the angry Frere, half to himself. "Insolent blackguards!"

Letters: 5481

Words: 1241

Sentences: 41

Paragraphs: 13

Word Length	Number of words
1	32
2	182
3	344
4	203
5	146
6	83
7	113
8	68
9	40
10	19
11	6
12	4
13	0
14	1

Words per Sentence	Number of sentences
1 - 10	5
11 - 20	8
21 - 30	10
31 - 40	10
41 - 50	4
51 - 60	3
61 - 70	2

Project 2

Chance and Data: Making Decisions

HOW MUCH HOMEWORK?

Two teachers are discussing how much homework their senior students do.

“The problem with kids getting part time jobs in year 12 is that the more they work, the less homework they do. They're putting their future in jeopardy for a bit of pocket money now.”

“No, I don't agree. Video games are a bigger distraction from homework than having a job. The more video games kids play, the less work they do.”

Problem

Investigate **one** of these claims using the ABS CensusAtSchool database (<http://www.abs.gov.au/websitedbs/cashome.nsf/Home/Home>). Write up the result of your investigation in an article suitable for inclusion in Dove Tales.

(Note that you must submit all evidence of your working so all outcomes of the Common Assessment Framework can be assessed.)

Project 3

Space: In Three Dimensions

DESIGNING A MILK CARTON

An increasing awareness of environmental concerns and a desire to get an edge over the competition has led an innovative dairy company to conduct a competition to redesign their one-litre milk carton to use less cardboard.

Problem

Come up with a practical design for a one litre milk carton that uses less cardboard than the current design. Write up your design as a competition entry using the provided entry form.

(Note: All work attempted in developing the plan is to be submitted so that all outcomes of Modelling with Mathematics can be assessed.)

DESIGNING A MILK CARTON COMPETITION ENTRY FORM

Name:			Received:	
Description of design:				
List dimensions (or attach a clearly dimensioned diagram):				
	Capacity:	ml		
	Cardboard used:	cm ²		
Benefits and practical aspects of your design:				
Extra pages may be attached if necessary. Submit a 1:1 scale model and net with your entry form.				

Project 4

Space: In Three Dimensions

KEEP IT SECURE

Jane and Tim have just bought a new home in the suburbs. They both work and often go away for weekends. After reading the local newspapers they were concerned about the number of burglaries being committed in the local area, as they are keen antique collectors. They make some inquiries about home security and decide install an electronic surveillance alarm system.

Problem

You are to act as a representative from a security company that installs two types of sensors (the details for the sensors are provided on the following pages).

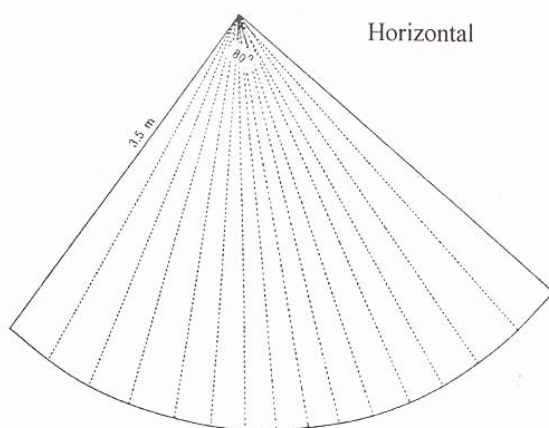
Jane and Tim have placed their antique collection in the games room. (See the plan on the next page). Items have been placed in shelving that covers all walls and items cover most of the floor space.

You are required to provide Jane and Tim with a recommendation of a plan for the placement of the specified sensors. The plan is to be accompanied by a covering letter discussing the placement of sensors and the security of your plan.

(Note: All work attempted in developing the plan is to be submitted so that all outcomes of Modelling with Mathematics can be assessed.)

SENSOR SPECIFICATIONS - KEEP IT SECURE

Sensor Specifications



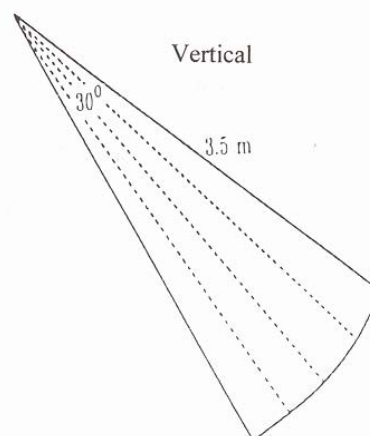
Sensor JS 15

Range: 3.5m

Horizontal Angle: 80°

Vertical Angle: 30°

Sensor can be angled to suit situation.



Sensor JS 17

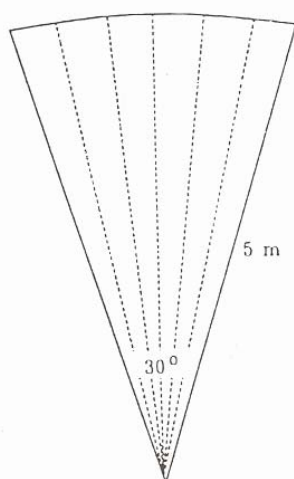
Range: 5m

Horizontal Angle: 30°

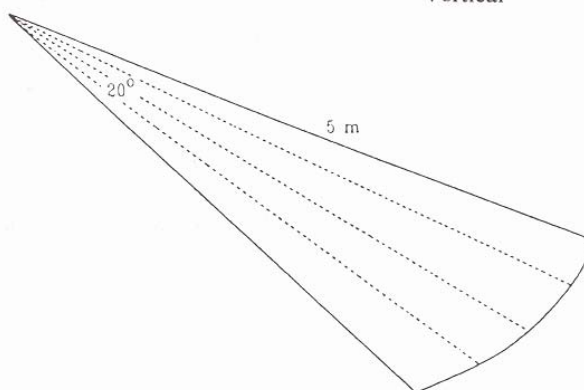
Vertical Angle: 20°

Sensor can be angled to suit situation.

Horizontal

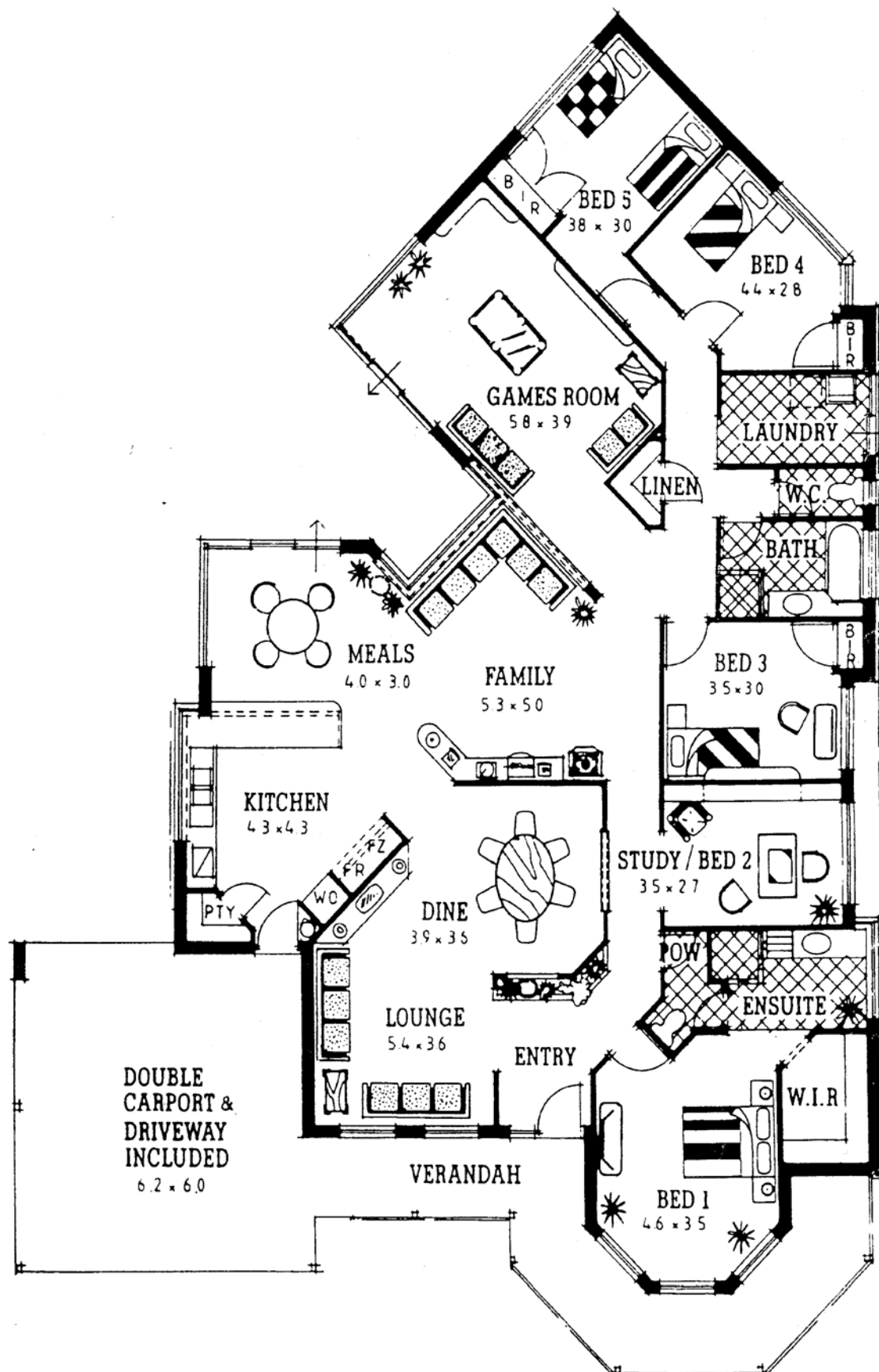


Vertical



Courtesy of Webb and
Brown-Neaves Home Builders

FLOOR PLAN (for Activity 2)



Project 5

Number: Finance

SHARE TRADING

Investing in the shares of a company can be an effective way to earn if sufficient company research is conducted. By analysing the past performance and future expectations of a company a prediction of future share price can be made. Obviously this is not an exact science and therefore an element of risk is associated with share investment.

There are brokerage costs associated with share trading, so it becomes unprofitable to buy and sell shares frequently or in small quantities. This means that in order to make a profit, care must be taken before the decision to buy or sell is made.

Problem

In this assignment you are to take a hypothetical \$50,000 and invest it in at least 5 companies listed on the ASX in order to make a profit when the shares are sold at the end of a three week period. Following the sale of your shares, you must write a report detailing:

- the background research you did prior to making your investments
- full calculations for your buy/sell transactions taking into account all costs and charges
- your comments on how useful shares are as a short-term investment

Project 6

Number: Finance

SPREADING WEALTH

Roseanne's grandmother set up an investment for her when she was born in 1985, which was not to be touched until she turned 21. The initial investment was \$5,000 and her parent's added \$200 per year.

Problem

Consider the following scenarios:

1. She receives no interest on her money?
2. Interest is earned.
3. Roseanne's parents increase the amount deposited each year by the inflation rate.

Investigate and compare each situation by making and clearly stating reasonable assumptions to compare and comment on each of the scenarios.

(Note: You must submit all evidence of your working so that the outcomes of Modelling with Mathematics can be assessed.)