

GRE Sample Paper 07

A) Test Components: Analytical Writing — Verbal Reasoning — Quantitative Reasoning

B) Total Questions: 108 Questions

C) Total Time Allowed: 3 Hours 45 Minutes

- **Analytical Writing:** 2 Essays — 60 Minutes
- **Verbal Reasoning:** 2 Sections — 82 Minutes Total
- **Quantitative Reasoning:** 2 Sections — 94 Minutes Total

D) Marking Scheme:

- **Correct Answer:** +1 Point
- **Incorrect/Unattempted:** 0 Points (No Negative Marking)
- **Multi-blank/Equivalence:** No partial credit.

SECTION I: ANALYTICAL WRITING

1. Analyze an Issue (30 Minutes)

"In any field of endeavor—whether it be the arts, politics, or the sciences—it is impossible to make a significant contribution without first mastering the work of those who have come before you."

2. Analyze an Argument (30 Minutes)

The following appeared in a memorandum from the human resources director of NexGen Tech.

"Six months ago, our local competitor, CodaStream, implemented a mandatory four-day workweek for all of its software developers. Since this change, CodaStream has reported a 30 percent increase in employee job satisfaction and a significant reduction in the number of errors in their software releases. To improve NexGen Tech's own software quality and ensure we can recruit the most talented developers, we should immediately adopt an identical four-day workweek for our entire staff. This shift will undoubtedly lead to a more efficient workforce and higher overall profits."

SECTION II: VERBAL REASONING - PART 1

Q1. The new CEO's _____ was a welcome change for the employees; unlike her predecessor, who was prone to cryptic memos and secretive meetings, she insisted on total transparency.

- A. Candor
- B. Duplicity
- C. Ebullience
- D. Insolence

Q2. The city council's plan to revitalize the waterfront was _____ by a lack of funding and a series of legal challenges from local environmental groups.

- A. Bolstered
- B. Stymied
- C. Preceded
- D. Sanctioned

Q3. While the young prodigy was (i) _____ in her technical mastery of the violin, critics noted that her performances lacked the (ii) _____ that only comes with years of lived emotional experience.

- A. (i) Deficient; (ii) Virtuosity
- B. (i) Consummate; (ii) Maturity
- C. (i) Consummate; (ii) Audacity
- D. (i) Mediocre; (ii) Maturity

Q4. The investigative journalist revealed that the charity was (i) _____; although it claimed to use 90% of donations for disaster relief, it was actually a (ii) _____ designed to funnel money into the founder's private offshore accounts.

- A. (i) Altruistic; (ii) Conduit
- B. (i) Fraudulent; (ii) Facade
- C. (i) Fraudulent; (ii) Benchmark
- D. (i) Nefarious; (ii) Panacea

Q5. The passage suggests that "Nudge Theory" in behavioral economics:

- A. Relies on financial penalties to force citizens to make better health choices.
- B. Assumes that humans always make rational, utility-maximizing decisions.
- C. Alters the environment to influence behavior without restricting individual choice.
- D. Has been proven ineffective in large-scale public policy applications.

Q6. According to the passage, the "choice architect" is responsible for:

- A. Designing the physical layout of shopping malls to maximize consumer spending.
- B. Organizing the context in which people make decisions.
- C. Drafting the legislation that regulates the stock market.
- D. Predicting the exact outcome of every individual's financial path.

Q7. The author mentions "automatic enrollment in retirement plans" primarily to:

- A. Contrast the banking systems of different developed nations.
- B. Argue that the government should have more control over private savings.
- C. Provide an example of a "default option" that significantly increases participation rates.
- D. Criticize the lack of financial literacy among the general public.

Q8. The witness's story was so _____ that even the most sympathetic members of the jury began to doubt his credibility.

- A. Garrulous and Loquacious
- B. Incoherent and Rambling
- C. Pithy and Succinct
- D. Cogent

Q9. The mountain air was famously _____, and many travelers visited the high-altitude resorts specifically to recover from respiratory ailments contracted in the smoggy cities.

- A. Pernicious
- B. Salubrious and Healthful
- C. Miasmatic
- D. Soporific

Q10. A study found that high school students who took music lessons scored higher on math tests. The researchers concluded that music training enhances mathematical reasoning. Which of the following, if true, most weakens this conclusion?

- A. Math teachers at the school often use musical rhythms to teach fractions.
- B. The students who took music lessons came from wealthier families who also provided private math tutoring.
- C. Learning to read music requires understanding complex patterns and ratios.
- D. The school's music program was recently expanded due to a local grant.

Q11. Choose the sentence that correctly uses the verb "to lie" (meaning to recline) in the past tense:

- A. Yesterday, I laid on the sofa for three hours after work.
- B. Yesterday, I lay on the sofa for three hours after work.
- C. Yesterday, I have lain on the sofa for three hours after work.
- D. Yesterday, I was laying on the sofa for three hours after work.

Q12. In the sentence "As a disinterested observer, the mediator was able to settle the dispute fairly," the word "disinterested" most nearly means:

- A. Bored and lacking focus
- B. Impartial and unbiased
- C. Hostile and antagonistic
- D. Lacking any prior knowledge

SECTION III: VERBAL REASONING - PART 2

Q1. The critic's review was (i) _____; while she (ii) _____ the author's previous works, she found this latest novel to be (iii) _____ and lacking in emotional depth.

- A. (i) Unexpected; (ii) Extolled; (iii) Vapid
- B. (i) Consistent; (ii) Derided; (iii) Profound
- C. (i) Unexpected; (ii) Ignored; (iii) Vapid
- D. (i) Harsh; (ii) Extolled; (iii) Insightful

Q2. The economic forecast was (i) _____, but the (ii) _____ growth in the technology sector provided a glimmer of hope for investors.

- A. (i) Gloomy; (ii) Robust
- B. (i) Sanguine; (ii) Sluggish
- C. (i) Gloomy; (ii) Negligible

D. (i) Bright; (ii) Robust

Q3. To the board, the CEO's spending appeared (i) _____, but he defended it as a (ii) _____ investment in the company's future infrastructure.

- A. (i) Profligate; (ii) Prudent
- B. (i) Frugal; (ii) Reckless
- C. (i) Profligate; (ii) Accidental
- D. (i) Strategic; (ii) Prudent

Q4. The student found the assignment (i) _____, but the (ii) _____ grade she received made her realize she had mastered the material.

- A. (i) Daunting; (ii) Exemplary
- B. (i) Facile; (ii) Poor
- C. (i) Daunting; (ii) Mediocre
- D. (i) Simple; (ii) Exemplary

Q5. The writer's reputation for _____ was well-earned; he could distill complex philosophical ideas into a few simple, powerful sentences.

- A. Brevity
- B. Garrulity
- C. Verbosity
- D. Prolixity

Q6. The instructions for the tax forms were so _____ that many citizens were forced to hire professional accountants.

- A. Convoluted
- B. Pellucid
- C. Manifest
- D. Straightforward

Q7. According to the passage, the "Invisible Hand" in economic theory suggests that:

- A. The government must intervene to ensure fair prices.
- B. Individual self-interest can unintentionally lead to collective social benefits.
- C. Wealthy individuals have a moral obligation to donate to charity.

D. The stock market is controlled by a small group of elite investors.

Q8. The author mentions "market equilibrium" primarily to:

- A. Describe the point where supply and demand are balanced.
- B. Argue that prices should be fixed by central authorities.
- C. Explain why monopolies are beneficial for the consumer.
- D. Contrast modern capitalism with feudal economic systems.

Q9. Which of the following best expresses the "rational actor" assumption mentioned in the text?

- A. People always make decisions that maximize their own personal utility.
- B. Human behavior is primarily driven by subconscious emotions.
- C. Governments are more efficient at allocating resources than individuals.
- D. Economic models should ignore individual choices and focus on groups.

Q10. A study found that cities with more public libraries have higher literacy rates. However, these cities also have much higher education budgets. Which weakens the conclusion that libraries themselves cause higher literacy?

- A. Librarians provide essential services to the community.
- B. The education budget includes funding for school reading programs.
- C. Many people now read books on digital devices rather than at libraries.
- D. Literacy rates are rising globally regardless of library counts.

Q11. The weather was _____, with dark clouds and a chilling wind that suggested a storm was approaching.

- A. Clement and Mild
- B. Inclement and Tempestuous
- C. Serene
- D. Placid

Q12. The child was _____, refusing to eat his vegetables no matter what his parents promised.

- A. Obdurate and Recalcitrant
- B. Docile and Compliant
- C. Amiable

D. Malleable

Q13. The new law was _____, having no real effect on the problem it was intended to solve.

A. Innocuous and Ineffectual

B. Potent and Powerful

C. Deleterious

D. Pernicious

Q14. The actor's performance was _____, moving the audience to tears with its raw emotional power.

A. Poignant and Touching

B. Dull and Vapid

C. Banal

D. Trite

Q15. The path through the woods was _____, twisting and turning until the hikers lost their sense of direction.

A. Sinuous and Tortuous

B. Linear and Straight

C. Direct

D. Unwavering

SECTION IV: QUANTITATIVE REASONING - PART 1

Q1. Store A sells an item for 10% less than the list price. Store B sells the same item for 20% less than the list price, but adds a 10% service fee to the discounted price.

Quantity A	Quantity B
The price of the item at Store A	The price of the item at Store B

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

Q2. A jar contains 48 candies that are either red, blue, or green. There are twice as many red candies as blue candies, and the number of green candies is 8 more than the number of blue candies. How many red candies are in the jar?

- A. 10
- B. 12
- C. 16
- D. 20
- E. 24

Q3. x and y are positive integers such that $x + y = 12$.

Quantity A	Quantity B
The maximum possible value of xy	35

- A. Quantity A is greater.
- B. Quantity B is greater.
- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q4. $k < 0$.

Quantity A	Quantity B
$ k + k + 1 $	$ 2k + 1 $

- A. Quantity A is greater.
- B. Quantity B is greater.
- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q5. If $\frac{3}{x} = \frac{2}{x-1}$, then $x =$

- A. -3
- B. -1
- C. 1
- D. 3
- E. 5

Q6. A car travels 120 miles in 2 hours and 30 minutes. If it continues at this constant rate, how many miles will it travel in the next 45 minutes?

- A. 24
- B. 30
- C. 36
- D. 40
- E. 45

Q7. From a group of 5 men and 3 women, a committee of 2 people is to be chosen at random. What is the probability that the committee will consist of 2 women?

- A. $\frac{3}{28}$
- B. $\frac{3}{56}$
- C. $\frac{1}{4}$
- D. $\frac{9}{64}$
- E. $\frac{3}{8}$

Q8. A regular polygon has interior angles that each measure 144 degrees. How many sides does the polygon have?

- A. 6
- B. 8
- C. 10
- D. 12
- E. 15

Q9. If x is a multiple of 6 and y is a multiple of 9, which of the following must be a multiple of 18? (Select all that apply)

- ☐ xy
- ☐ $3x + 2y$
- ☐ $x + y$

Q10. A worker can complete $\frac{3}{4}$ of a specific task in 9 days. At this rate, how many additional days will it take the worker to complete the entire task?

Q11. If $x = 3^{10}$ and $y = 3^9$, then $x - y =$

- A. 1

- B. 3
- C. $2(3^9)$
- D. 3^9
- E. 3^{19}

Q12. The average of 8, 12, 16, and x is 15. The average of 20, 25, and y is 15. What is the value of $x + y$?

SECTION V: QUANTITATIVE REASONING - PART 2

Q1. n is an integer such that $n^2 < 20$.

Quantity A	Quantity B
The number of possible values for n	9

- A. Quantity A is greater.
- B. Quantity B is greater.
- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q2. The number of distinct prime factors of 60 is x . The number of distinct prime factors of 90 is y .

Quantity A	Quantity B
x	y

- A. Quantity A is greater.
- B. Quantity B is greater.
- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q3. S is a set of 5 consecutive integers.

Quantity A	Quantity B
The range of set S	The mean of set S

- A. Quantity A is greater.

- B. Quantity B is greater.
- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q4. If the cost of production of an item decreases by 20%, by what percent must the selling price be increased to result in a 50% profit margin based on the new cost?

- A. 10%
- B. 20%
- C. 30%
- D. 40%
- E. Information is insufficient

Q5. A square is inscribed in a circle of area 18π . What is the area of the square?

- A. 9
- B. 18
- C. 36
- D. 72
- E. 81

Data Interpretation: Energy Consumption by Source (Exajoules)

Source	2010	2015	2020
Coal	150	165	140
Natural Gas	100	120	135
Renewables	40	60	95
Nuclear	30	30	35

Q6. Which energy source experienced the greatest percentage increase from 2010 to 2020?

- A. Coal
- B. Natural Gas
- C. Renewables
- D. Nuclear
- E. They are all equal

Q7. In 2015, Natural Gas consumption accounted for what fraction of the total energy consumption from these four sources?

- A. $\frac{4}{25}$
- B. $\frac{1}{4}$
- C. $\frac{4}{11}$
- D. $\frac{2}{5}$
- E. $\frac{1}{2}$

Q8. What was the average (arithmetic mean) annual consumption of Nuclear energy across the three years listed?

Q9. In the xy -coordinate plane, the line $y = mx + b$ passes through $(2, 5)$ and $(-1, -1)$. What is the value of b ?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

Q10. If $f(x) = 3x - 1$ and $g(x) = x^2 + 2$, what is the value of $g(f(2))$?

Q11. A password consists of 3 letters followed by 2 digits. If the letters must be chosen from $\{A, B, C\}$ and can be repeated, and the digits must be chosen from $\{1, 2, 3\}$ and cannot be repeated, how many different passwords can be formed?

- A. 54
- B. 162
- C. 216
- D. 486
- E. 729

Q12. A right triangle has a hypotenuse of length c and legs of length a and b . The area of the triangle is 24.

Quantity A	Quantity B
$a + b$	10

- A. Quantity A is greater.

- B. Quantity B is greater.
- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q13. When the positive integer n is divided by 7, the remainder is 2. What is the remainder when $3n + 5$ is divided by 7?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

Q14. If $|2x - 5| \leq 3$, which of the following describes the possible values of x ?

- A. $1 \leq x \leq 4$
- B. $x \leq 4$
- C. $-1 \leq x \leq 4$
- D. $1 \leq x \leq 8$
- E. $x \geq 1$

Q15. In a group of 120 people, 70 like vanilla ice cream, 60 like chocolate, and 20 like neither. How many people like both vanilla and chocolate?

Solutions - Verbal Reasoning Section I

1. **(A)** The sentence creates a contrast using "unlike." While the predecessor was "cryptic" and "secretive," the new CEO insists on "total transparency." "Candor" means the quality of being open and honest in expression, which perfectly fits this context.
2. **(B)** The project was hindered by a "lack of funding" and "legal challenges." "Stymied" means to prevent or hinder the progress of an effort, which describes why the revitalization plan was unsuccessful.
3. **(B)** For blank (i), "consummate" means showing a high degree of skill or flair, fitting the "prodigy" description. For blank (ii), "maturity" fits the contrast that she lacks the emotional depth that "only comes with years of lived experience."
4. **(B)** The contrast word "although" indicates a gap between appearance and reality. The charity was "fraudulent" because while it claimed to be for relief, it was actually a "facade" (a deceptive outward appearance) used to hide the theft of money.
5. **(C)** "Nudge Theory" is the central pillar of behavioral economics. Its core definition is that policy makers can "alter the environment to influence behavior" (the nudge) without "restricting individual choice" (libertarian paternalism).
6. **(B)** In Nudge Theory, the "choice architect" is the person or entity responsible for "organizing the context in which people make decisions," such as the way items are displayed on a shelf or how options are presented on a form.
7. **(C)** The passage uses automatic enrollment as the quintessential example of a "default option." Because humans tend to stick to the default, this specific "nudge" significantly "increases participation rates" without forcing anyone to participate.
8. **(B)** In Sentence Equivalence, the words must describe a story that causes a jury to "doubt credibility." "Incoherent" and "rambling" both describe a narrative that is confusing, lacking logic, and disorganized.
9. **(B)** The travelers visit the mountains to "recover" from city pollution. "Salubrious" and "healthful" are synonyms that both mean health-promoting or beneficial to one's well-being.
10. **(B)** The argument claims music causes math ability. To weaken this, we need a confounding variable. Option (B) suggests that "wealthy families" who provide "math tutoring" are the true cause, meaning the link to music lessons is merely a correlation.
11. **(B)** This is a classic grammar point. To recline is "lie" (present), "lay" (past), and "lain" (past participle). Therefore, the correct past tense sentence is "Yesterday, I lay on the sofa." (Note: "Laid" is the past tense of the verb "to lay," meaning to put something down).
12. **(B)** In a GRE context, "disinterested" is a high-frequency trap word. It does not mean "bored." It means "impartial and unbiased"—having no personal stake or financial interest in the outcome of a dispute.

Solutions - Verbal Reasoning Section II

1. (A) For blank (i), the review is "unexpected" because of the contrast in blank (ii). While she "extolled" (praised) previous works, the new work is blank (iii) "vapid" (offering nothing that is stimulating or challenging).
2. (A) The contrast "but" suggests the initial forecast was negative. "Gloomy" fits the negative outlook, while the "robust" (strong/healthy) growth in tech provides the "glimmer of hope."
3. (A) The board viewed the spending as "profligate" (recklessly extravagant/wasteful). The CEO's defense is that the spending was actually "prudent" (acting with or showing care and thought for the future).
4. (A) For blank (i), "daunting" means intimidatingly difficult. The contrast "but" followed by "mastered the material" suggests that despite the difficulty, the result was "exemplary" (representing the best of its kind).
5. (A) The ability to "distill complex ideas into few simple sentences" is the definition of "brevity" (conciseness and exactness of use of words in writing or speech).
6. (A) If citizens are "forced to hire professional accountants," the forms must be "convoluted," meaning extremely complex and difficult to follow.
7. (B) Adam Smith's "Invisible Hand" theory argues that when individuals act in their own "self-interest," they "unintentionally lead to collective social benefits" through the natural balance of supply and demand.
8. (A) "Market equilibrium" is the technical term for the specific point where the quantity of goods supplied is exactly equal to the quantity of goods demanded.
9. (A) Standard economic theory relies on the "rational actor" assumption, which posits that "people always make decisions that maximize their own personal utility" or benefit.
10. (B) The conclusion is that libraries cause literacy. To weaken this, we need an alternative cause. If cities with libraries also have high funding for "school reading programs," those programs might be the real reason literacy is higher.
11. (B) "Dark clouds" and "chilling wind" indicate a storm. "Inclement" and "tempestuous" both describe weather that is rough, stormy, and unpleasantly cold or wet.
12. (A) A child who "refuses to eat no matter what" is stubborn. "Obdurate" and "recalcitrant" both describe someone who is stubbornly resistant to authority or control.
13. (A) A law with "no real effect" on a problem is useless. "Innocuous" and "ineffectual" both describe something that is harmless or lacks the power to produce the desired effect.
14. (A) A performance that moves an audience to tears is "poignant" and "touching," both synonyms for evoking a keen sense of sadness or regret.

15. **(A)** A path that is "twisting and turning" is "sinuous" and "tortuous." Both words describe a route or movement with many turns and bends.

Solutions - Quantitative Reasoning Section I

1. **(A)** Let the list price be 100. Store A: $100 - 0.10(100) = 90$. Store B: $100 - 0.20(100) = 80$, then add 10% fee: $80 + 0.10(80) = 88$. Since $90 > 88$, Quantity A is greater.
2. **(20)** Let blue = B . Red = $2B$ and Green = $B + 8$. Total: $2B + B + (B + 8) = 48 \Rightarrow 4B + 8 = 48 \Rightarrow 4B = 40 \Rightarrow B = 10$. Red candies = $2(10) = 20$.
3. **(A)** For a fixed sum, the product xy is maximized when x and y are equal. $x = 6, y = 6 \Rightarrow xy = 36$. Since $36 > 35$, Quantity A is greater.
4. **(D)** If $k = -0.5$, $|-0.5| + |0.5| = 1$ and $|2(-0.5) + 1| = 0$ (A is greater). If $k = -2$, $|-2| + |-1| = 3$ and $|2(-2) + 1| = 3$ (Equal). The relationship is inconsistent.
5. **(D)** $3(x - 1) = 2x \Rightarrow 3x - 3 = 2x \Rightarrow x = 3$.
6. **(C)** Rate = 120 miles/2.5 hours = 48 mph. In 45 minutes (0.75 hours): $48 \times 0.75 = 36$ miles.
7. **(3/28)** Total ways to choose 2 from 8: $\binom{8}{2} = 28$. Ways to choose 2 women from 3: $\binom{3}{2} = 3$. Probability = $3/28$.
8. **(10)** Exterior angle = $180 - 144 = 36^\circ$. Number of sides $n = 360/\text{exterior angle} = 360/36 = 10$.
9. **(A, B)** Let $x = 6a$ and $y = 9b$. $xy = 54ab$ (always multiple of 18). $3x + 2y = 3(6a) + 2(9b) = 18a + 18b = 18(a + b)$ (always multiple of 18). $x + y$ is not necessarily a multiple of 18 (e.g., $6 + 9 = 15$).
10. **3** If $3/4$ task takes 9 days, $1/4$ task takes 3 days. To complete the remaining $1/4$ of the task, it takes 3 additional days.
11. **(C)** $3^{10} - 3^9 = 3^9(3^1 - 1) = 3^9(2) = 2(3^9)$.
12. **24** For x : $(36 + x)/4 = 15 \Rightarrow 36 + x = 60 \Rightarrow x = 24$. For y : $(45 + y)/3 = 15 \Rightarrow 45 + y = 45 \Rightarrow y = 0$. $x + y = 24$.

Solutions - Quantitative Reasoning Section II

1. **(C)** Integers n such that $n^2 < 20$ are $\{-4, -3, -2, -1, 0, 1, 2, 3, 4\}$. There are 9 such values. The quantities are equal.
2. **(C)** $60 = 2^2 \times 3 \times 5$ (3 distinct factors). $90 = 2 \times 3^2 \times 5$ (3 distinct factors). The quantities are equal.
3. **(D)** The range of 5 consecutive integers is always 4. However, the mean depends on the values (e.g., for $\{1, 2, 3, 4, 5\}$, mean is 3; for $\{10, 11, 12, 13, 14\}$, mean is 12). The relationship cannot be determined.
4. **(E)** We are not given the original selling price. Without knowing the initial price relative to the initial cost, we cannot determine the percentage increase required for the selling price.
5. **(D)** Area $\pi r^2 = 18\pi \Rightarrow r^2 = 18$. The diagonal of the inscribed square is the diameter $d = 2r$. Area of square $= d^2/2 = (2r)^2/2 = 4r^2/2 = 2r^2 = 2(18) = 36$.
6. **(C)** Coal: decreased. Gas: $35/100 = 35\%$. Renewables: $55/40 = 137.5\%$. Nuclear: $5/30 \approx 16.7\%$. Renewables had the greatest increase.
7. **(8/25)** 2015 Total $= 165 + 120 + 60 + 30 = 375$. Natural Gas fraction $= 120/375 = 8/25$.
8. **31.67** Average $= (30 + 30 + 35)/3 = 95/3 \approx 31.67$.
9. **(1)** Slope $m = (5 - (-1))/(2 - (-1)) = 6/3 = 2$. Using $y = mx + b \Rightarrow 5 = 2(2) + b \Rightarrow b = 1$.
10. **27** $f(2) = 3(2) - 1 = 5$. $g(5) = 5^2 + 2 = 27$.
11. **(162)** Letter choices: $3 \times 3 \times 3 = 27$. Digit choices: $3 \times 2 = 6$. Total passwords $= 27 \times 6 = 162$.
12. **(A)** Area $0.5ab = 24 \Rightarrow ab = 48$. By AM-GM inequality, $(a+b)/2 \geq \sqrt{ab} \Rightarrow a+b \geq 2\sqrt{48} \approx 13.85$. Thus $a+b$ is always greater than 10.
13. **(D)** $n = 7k + 2$. Then $3n + 5 = 3(7k + 2) + 5 = 21k + 6 + 5 = 21k + 11$. 11 divided by 7 leaves a remainder of 4.
14. **(A)** $-3 \leq 2x - 5 \leq 3 \Rightarrow 2 \leq 2x \leq 8 \Rightarrow 1 \leq x \leq 4$.
15. **30** People liking at least one $= 120 - 20 = 100$. Both $= (\text{Van} + \text{Choc}) - \text{Total Union} = (70 + 60) - 100 = 30$.