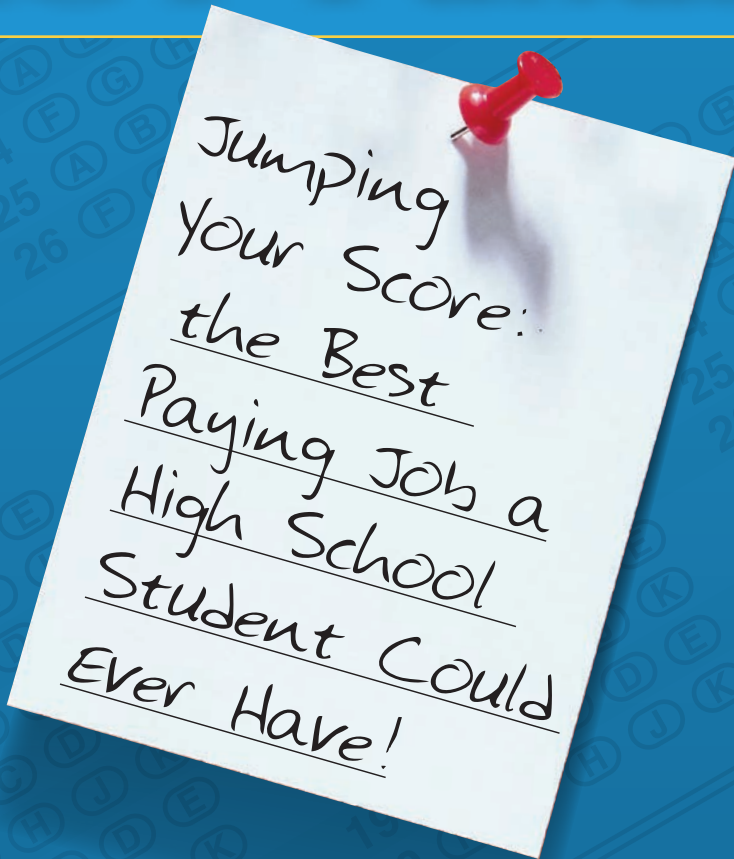


JOHN BAYLOR

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ACT[®] Fundamentals



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The 4 Sections

1. English	75 questions	45 minutes
2. Math	60 questions	60 minutes
3. Reading	40 questions	35 minutes
4. Science Reasoning	40 questions	35 minutes
total	215 questions	175 minutes (nearly 3 hours)

Always fill in
one bubble for
each question.

All multiple choice. Good news: only four choices per question, except for Math, which has five.

When you truly do not understand, there is **no penalty for guessing** the wrong answer. **So let's "get it down to two" and then make a choice for each question.**

Should I read the directions? In life—always. On the ACT—don't spend the valuable time. You'll soon know this test and its directions cold.

Scoring: 1 to 36.

When should I take the ACT?

Take the ACT at least twice junior year and twice senior fall – the December ACT, senior year is typically the final one colleges will consider for admissions and financial aid.

Circle four:

Jr Year: Sept Oct Dec Feb Apr June

Sr Year: Sept Oct Dec

Why jump your score?

- Win scholarships!
- Get into a 4-year college!
- Avoid remedial classes!

Your
Attitude
Determines
Your
Altitude: Attack!

Grammar Questions: about **80%** of the questions within the ACT English section.

The JBTP Grammar Rules

GR 1. **Less is More.**

- a. Go with the shortest answer unless the shortest is horrible.

GR 2. **Honor thy commas.**

- a. Exaggerate the pause and the inflection change.

GR 3. **A Full Sentence: has three components.**

- a. A subject—The **dog** sought shelter from the storm.
- b. A verb—Mary proudly **carried** her bucket of fish.
- c. A complete thought—**Bobby yelled.**

GR 4. **Subject – Verb agreement: subjects agree with their verbs in number** (singular or plural).

- a. The **butterfly is** colorful.
- b. The **friends are** together.
- c. When there is a **single word underlined, it's probably a verb.** Every verb has a subject. When hunting down the subject, slash the prepositional phrase.

GR 5. **Each, none, neither, either, anyone, anybody, someone, everyone, everybody: are singular.**

- a. **Each** of the boys **has / have** arrived.
- b. **Neither** of the teams **is / are** any good.
- c. **None** of them **whines / whine** about homework.
- d. **Neither** of the cars **gets / get** good gas mileage.

GR 6. **Apostrophes: show possession.**

- a. If one owner: **'s**.
one **son's** coin collection one **girl's** sled
- b. If more than one owner: **s'**.
two **sons'** coin collection two **girls'** sleds
- c. **men's, women's, children's, and people's** are always **'s**.

GR 7. **Contractions.**

- a. Always say both words: it's, you've, you're, they've, we've, he's, they're, who's, etc...
- b. Impact: contractions are less formal, less emphatic, and less urgent.
- c. Who's v. Whose
 - i. There's the guy, **who's / whose** an achiever, not a slacker.
 - ii. There's the guy, **who's / whose** effort should lead to many scholarships.

GR 8. **Semicolons, colons, and dashes.**

- a. Semi-colon ; = , and **(bracketed by two complete thoughts).**
- b. Colon : = example(s) to follow **(a complete thought precedes a colon).**
- c. Hyphen or dash- = a comma or a colon.

GR 10. **How to put two sentences into one sentence** (two independent clauses or complete thoughts into one sentence).

- a. Full sentence; full sentence. (____; ____)
- b. Full sentence, **and** full sentence. (____, and ____)
 - i. Ed went to the store, **and** he bought some gum.

GR 12. **Prepositions.**

- | | | | | |
|-----------|-----------|------------|----------------|---------|
| a. about | above | across | after | against |
| around | along | among | at | behind |
| before | beneath | beside | between | |
| beyond | by | down | during | |
| except | for | from | in | near |
| of | off | on | opposite | |
| out | outside | over | past | |
| regarding | round | since | to | |
| through | under | underneath | until | up |
| with | within | without | | |
- b. Prepositional phrases begin with prepositions and end with nouns, but never have subjects.

GR 13. **Extra information has commas or dashes around it.**

- a. The guy in the red sweater, **my dad**, is flipping pancakes.
- b. Bob, the **fastest runner**, jogged in for a touchdown.

However, indeed, in fact, of course, for example, and for instance are nearly always surrounded with commas. And though when = however.

GR 14. **Parallelism.**

- a. Stay with the trend within the sentence.
- i. She was **walking, talking, and running**.
 - ii. She **walked, talked, and ran** yesterday.

GR 15. **Pronouns.**

- a. It must be clear what the pronoun refers to (must have a clear antecedent).
- i. **Bob and Jim** went to the mall. **He / they** bought some jeans.
- b. Must agree in number and gender with its antecedent.
- i. **Sally and George** have a happy marriage. **They** are friends of ours.
- c. Get rid of the names around the pronoun: **isolate the pronoun.**
- i. Give the books to **Ed, Rod, Barb, and me / I**.
 - ii. Please study with **Ralph, Myrtle, Hallie, and me / I**.
- g. who v. whom:
- i. Begin with **who/whom** in the sentence, take out **who** or **whom**, and plug in **he** or **they**.
If **he** or **they** works, go with **who**.
1) **Who/Whom** is this for?
2) **Who/Whom** gave you that?

GR 17. **The modifying clause goes next to what it modifies:**

- a. Driving home after dark, **he** proceeded cautiously.
- b. A dedicated cellist, **Rachel** didn't understand her friends who played computer games.

GR 18. **Voice cannot change within a sentence:**

- a. **One** will find that the library is a great place for **you / one** to learn.
- b. If **you** have quit playing an instrument, **you / one** can undo that decision.

GR 19. **Comparing multiple things:**

- a. Two things: use **-er, more, or less**.
Three or more things: use **-est, most, or least**.
- i. That's the **faster** car. vs. That's the **fastest** car.
 - ii. **less** expensive dress. vs. **least** expensive dress.

- GR 20. **Non-words:**
 a. irregardless b. funner c. where at
 d. its' e. could of

- GR 22. When torn between two answers, cross out the gunk: **prepositional phrases, adjectives, adverbs, and extra info.**

Content Questions: about **20%** of the questions within the ACT English section.

The JBTP Strategy: Content Questions

1. Underline the key words in the question.
2. Answer the question literally. For example:
 - a. Which of the following sentences **contradicts** something previously established within the essay?
 - b. Which of the following sentences best **illustrates** the disorganization within the office?
3. **Get it down to two.** Circle & bubble.
4. **Quick-Check:** reread the question and your answer choice.

The JBTP English Strategy: Grammar Questions

1. Read first time through with 'a': **'in' or 'out'.**
2. Reread, plugging in 'b': **'in' or 'out'.**
3. Look at shortened version with 'c': **'in' or 'out'.**
4. Look at shortened version with 'd': **'in' or 'out'.**
5. **Get it down to two.**
6. Armed with JBTP's 22 grammar rules, **reread each and make a choice** (circle & bubble).
7. **Quick-Check™:** reread, plugging in your answer choice.

Never score below 20 again...

English

You should be above 20. Just master your Grammar Rules, and practice with English passages. How?

Hammer: 1 passage - 9 minutes - review - repeat.

Reading

Don't worry about the last passage. Just get 70% of the first 30 questions right, and single-bubble the final ten. How?

Hammer: 1 passage - 8:45 - review - repeat.

Relax and focus - only 3 passages in 35 minutes!

Math

Don't worry about the last ten questions. Just get 2/3rds of the first 50 right, and single-bubble the final ten questions. How?

Hammer: 3 questions - 3 minutes - review - repeat.

Relax and focus - only 50 questions in 60 minutes!

Science

Don't worry about the last passage. Just get 70% of the questions in the first 6 passages correct, and single-bubble the final passage. How?

Hammer: 1 passage - 5 minutes - review - repeat.

Relax and focus - only 6 passages in 35 minutes!

Reading lasts 35 minutes and has four passages, each trailed by ten questions. That's **8:45** a passage. **We need to move.** To get a 22 - just do the first three passages and then straight line the last ten questions.

The JBTP Reading Strategy:

do not preview any questions initially. You don't have the time.

1. Read the intro paragraph above the passage's first paragraph.
2. Read paragraph #1: **UPS** (Underline, Push the Eyes, Summarize).
3. Read and summarize paragraph #2: **UPS**.
4. Finish reading the passage (ideally within 3:45): **UP**.
5. Slash answers first. Circle & bubble.
6. **Quick-Check™**: reread the question and your answer.
7. When torn between two, **slash the answer that's slightly too extreme.**

Skip the Middle Paragraphs:

Use only if beginning last passage with less than 8 minutes left.

1. Read and summarize intro, 1st, 2nd, and final paragraphs. **Skip the middle paragraphs.**
2. Hammer the questions: slash answers first.
 - i. You'll probably need to go to the text more and circle more question numbers than usual.

As in Reading, you have 35 minutes for 40 questions. But now rather than four essays, you have seven. That's **five** minutes per passage. To get a 22, just do the first six passages and then straight line the last ten questions.

Attack each passage.

- Even if you are not a science stud, all you need primarily is the capacity to comprehend graphs, visual aids, and their accompanying text;
- Be swift, but thorough.

The JBTP Science Strategy:

1. Go right to the question. Read it, and put your finger on the appropriate picture.
2. Summarize the relationships: 'proportional or inversely proportional.' Use symbols to capture the relationships (+, -, ...).
3. Read what you need.
4. Circle & bubble. Or at least "get it down to two," and then circle & bubble.
5. **Quick-Check™**: reread the question and your answer choice, glancing back at the picture if necessary.
6. For the text-only Science Reasoning passages – use the **JBTP Reading Strategy: UPS**.

PUDWYK: PUt Down What You Know

Show your work - formulas first

Then:




- **QUICK-CHECK:** rework each question quickly in your head or with your calculator — make sure it's right!

The JBTP Math Strategy:

1. **PUDWYK.**
2. **Work clearly** (sloppiness = points).
3. **Quick-Check™** in your head (or with your calculator). Circle & bubble.
4. **Get to all 60!**

Remember:

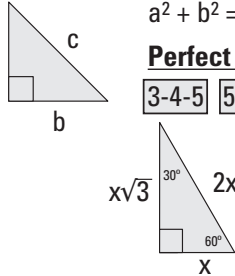
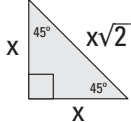
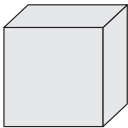
- **Focus first on the initial 20 questions;** if you miss many you are probably confusing a fundamental geometry formula or algebra technique.
- **Get the first 10 right.**
- A powerful form of PUDWYK: **GOOVGIN.**

			
Area	$\frac{1}{2}bh$	bh	πr^2
Perimeter/ Circumference	add sides	add sides	$2\pi r$
Degrees	180	360	360

$a^2 + b^2 = c^2$

Perfect right triangles

3-4-5	5-12-13	7-24-25	8-15-17
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Volume
 $V = lwh$

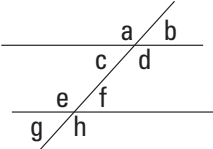
Exponents

$8^2 \cdot 8^4 = 8^6$ $\frac{3}{7^{-4}} = \frac{3(7^4)}{1}$ $(8^4)^3 = 8^{12}$

$\frac{8^2}{8^5} = 8^{-3} = \frac{1}{8^3}$ $8^0 = 1$ $\sqrt[4]{3^5} = 3^{5/4}$

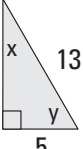
Probability = $\frac{\# \text{ of winners}}{\text{total}}$

$4! = 4 \cdot 3 \cdot 2 \cdot 1$



$a + b = 180$
 $f + h = 180$
 $a = d = e = h$

SOH CAH TOA

$\sin x = \frac{\text{opp}}{\text{hyp}} = \frac{5}{13}$ $\tan x = \frac{\sin x}{\cos x} = \frac{\text{opp}}{\text{adj}} = \frac{5}{12}$ 12 

$\cos x = \frac{\text{adj}}{\text{hyp}} = \frac{12}{13}$

$\frac{2}{3} + \frac{2}{3} = \frac{4}{3}$ $\frac{4}{3} \cdot \frac{2}{9} = \frac{8}{27}$

$\frac{8}{5} - \frac{1}{2} =$ $\frac{3}{5} = \frac{3}{1} \cdot \frac{5}{2} = \frac{15}{2}$

$\frac{16}{10} - \frac{5}{10} = \frac{11}{10}$

$|-3| = 3$

Foil
 $(x+1)(x-2) = 0$
 $x^2 - 2x + 1x - 2 = 0$
 $x^2 - x - 2 = 0$

Reverse Foil
 $x^2 - 7x + 10 = 0$
 $(x-5)(x-2) = 0$
 $x = 5 \quad x = 2$

Midpoint Formula
 $\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}$

$(x+2)^2 = (x+2)(x+2)$
 $= x^2 + 4x + 4$

Distance = (rate)(time)

Regular shaped object
of degrees =
(# of angles - 2) • 180

$y = mx + b$ **Lines**

$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x}$

$b = y \text{ intercept}$

$\perp \text{ slope} = \text{-reciprocal}$

Distance Formula
make the distance a hypotenuse & use $a^2 + b^2 = c^2$

Median = middle value

Mode = most recurring value

Mean = $\frac{\text{sum}}{\text{total \#}}$ = average

1, 2, 2, 5, 7, 9, 100

Median = Mode = Mean =

Circle Formula
center = x_1, y_1
 $(x-x_1)^2 + (y-y_1)^2 = r^2$

1. What is the value of $g(x) = (-3)x - 4$ when $x = 2$?

2. List from least to greatest: $\frac{2}{5}, \frac{3}{7}, \frac{4}{9}$

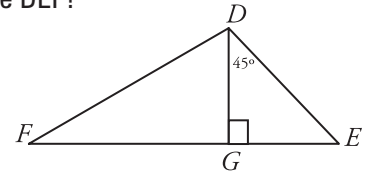
3.
$$\frac{(x - 4)^2}{x^2 - 16}$$

4. The sum of a and b is 20. Their difference is 6. What is ab ?

5. If $2x + y = 1$ and $8x + 5y = 8$, then x equals?

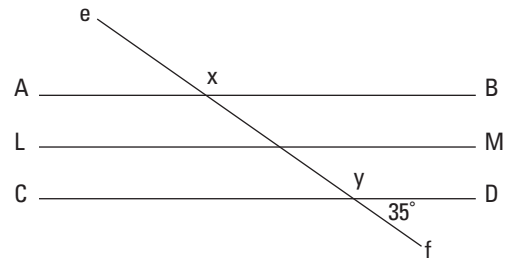
6. The shortest side of a 30 – 60 – 90 triangle is 3 cm in length. What is this triangle's perimeter?

7. In triangle DEF above, segment $DE = 8\sqrt{2}$ and $GF = 2EG$. What is the area of triangle DEF?



Note: Figure not drawn to scale.

8. If $\angle f$ is 35° , and if $AB \parallel CD$ and $CD \parallel LM$, what is the measure of $\angle x$?



9. 40% of 120 is what number?

9b. If Bobby increased his high jump 20% his junior year, and then another 10% his senior year, by what percent did he increase his high jump during his last two years of high school?