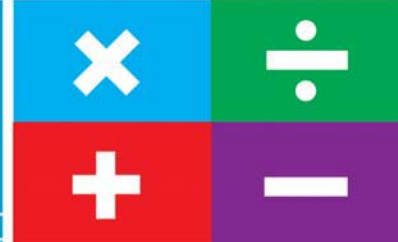


# MATH TODAY™ Student Edition

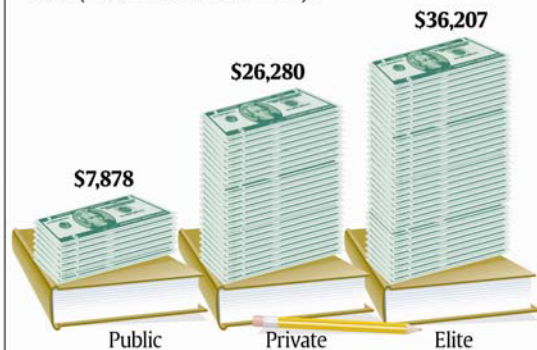


## Activity 10: Paying college tuition

### USA TODAY Snapshots®

#### Paying college tuition

Projected average annual tuition for four-year colleges in 2020 (in constant 2000 dollars):



Note: Elite colleges are defined as the top 100 ranked colleges based on the average SAT scores of admitted students  
Source: Sebago Associates for Upromise Inc.

By Karen Sloan and Marcy E. Mullins, USA TODAY

### Focus Questions:

- Q. How much will you/your parents pay for your college education? Project the cost to the year you expect to graduate.
- Q. Should the state government fund the larger portion of increases in tuition and other college costs?
- Q. Will the difference in total costs of public, private, and out of state universities determine where you go to college?

### Activity Overview:

Do you plan to attend a college, university, or technical school when you finish high school? If so, you will need to be prepared for those costs. The USA TODAY Snapshot, "Paying college tuition" displays one aspect of choosing a college that will fit your budget or your parent's budget. Read the USA TODAY articles for this activity to learn more about the cost of a college education.

In this activity, you will calculate the percent of increase for select major universities. Using the average increase, you will write an exponential equation to predict the cost of a college education in the years to come. You will then compare your predictions to those in the USA TODAY Snapshot.

See reading comprehension questions on the last page.

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Classroom Learning System

## Paying the price as a full-time freshman

AS SEEN IN USA TODAY NEWS SECTION, THURSDAY, AUGUST 8, 2002 PAGE 1A

When it comes to college costs, most of the focus is on tuition. But students also pay other fees associated with enrollment and campus living. What's the total price tag of a year at a public university? USA TODAY's In-Sung Yoo surveyed 68 major public universities - at least one in each state - to find out what first-year, full-time freshmen would be expected to pay this year, compared with last year, if they shared a dorm room with another student and selected the most popular meal plan.

University	In-state students			Out-of-state students		
	2001-02	2002-03	Chg.	2001-02	2002-03	Chg.
Univ. of Alabama, Tuscaloosa	\$7,202	\$7,590	%	\$12,822	\$13,658	%
Auburn Univ., Auburn, Ala.	8,880	9,370	%	15,400	16,670	%
Univ. of Alaska, Anchorage	8,186	8,350	%	12,242	12,526	%
Univ. of Arizona, Tucson	8,610	9,151	%	16,476	17,671	%
Arizona State Univ., Tempe	7,872	8,072	%	15,410	16,594	%
Univ. of Arkansas, Fayetteville	12,120	13,497	%	23,236	26,241	%
UCLA	11,455	12,014	%	22,529	24,393	%
Univ. of California, Berkeley	13,120	14,709	%	23,364	27,088	%
Univ. of Colorado, Boulder	9,255	9,838	%	23,265	25,182	%
Univ. of Connecticut, Storrs	12,122	12,588	%	21,240	22,262	%
Univ. of Delaware, Newark	10,824	11,462	%	19,914	20,992	%
Univ. of Florida, Gainesville	7,874	8,221	%	15,762	17,686	%
Florida State Univ., Tallahassee	7,835	8,312	%	15,723	17,856	%
Univ. of Georgia, Athens	8,527	9,120	%	16,423	18,490	%
Georgia State Univ., Atlanta	7,792	8,152	%	15,688	16,522	%
Univ. of Hawaii, Manoa	7,060	7,356	%	13,540	13,836	%
Idaho State Univ., Pocatello	7,344	7,986	%	13,584	14,226	%
Univ. of Illinois, Urbana-Champaign	11,885	13,108	%	19,705	21,712	%
Illinois State Univ., Normal	9,236	10,099	%	13,180	14,289	%
Indiana Univ., Bloomington	10,252	11,203	%	19,987	21,813	%
Purdue Univ., West Lafayette, Ind.	9,529	11,278	%	19,237	21,958	%
Iowa State Univ., Ames	7,869	8,841	%	15,203	17,533	%
Univ. of Iowa, Iowa City	8,193	9,631	%	16,621	19,273	%
Kansas State Univ., Manhattan	7,075	7,944	%	14,002	15,204	%
Univ. of Kansas, Lawrence	7,304	8,126	%	13,601	15,329	%
Univ. of Kentucky, Lexington	7,765	8,569	%	14,305	15,121	%
Louisiana State Univ., Baton Rouge	8,014	8,504	%	13,314	13,804	%
Univ. of Maine, Orono	10,845	11,268	%	18,615	19,438	%



University	In-state students			Out-of-state students		
	2001-02	2002-03	Chg.	2001-02	2002-03	Chg.
Univ. of Maryland, College Park	12,221	13,051	%	20,293	21,815	%
Univ. of Massachusetts, Amherst	10,327	11,955	%	18,550	20,178	%
Michigan State Univ., East Lansing	10,305	11,033	%	18,652	20,100	%
Univ. of Michigan, Ann Arbor	13,003	13,851	%	27,713	29,731	%
Univ. of Minnesota, Twin Cities	11,528	11,976	%	20,994	22,550	%
Univ. of Mississippi, Oxford	8,826	10,546	%	13,372	15,455	%
Univ. of Missouri, Columbia	9,820	10,634	%	18,265	19,787	%
Montana State Univ., Bozeman	8,451	9,121	%	15,217	16,758	%
The Univ. of Montana, Missoula	8,405	8,935	%	14,417	15,719	%
Univ. of Nebraska, Lincoln	8,325	8,990	%	13,927	15,583	%
Univ. of Nevada, Las Vegas <sup>1</sup>	8,043	8,518	%	15,258	16,303	%
Univ. of New Hampshire, Durham	13,304	14,012	%	22,724	23,712	%
Rutgers Univ., New Brunswick, N.J.	13,438	14,436	%	18,876	20,412	%
Univ. of New Mexico, Albuquerque	9,219	10,679	%	17,617	18,946	%
Univ. at Buffalo (SUNY)	11,108	11,392	%	16,008	16,292	%
SUNY at Stony Brook	10,825	11,159	%	15,725	16,059	%
Univ. of North Carolina, Chapel Hill <sup>2</sup>	8,847	10,356	%	18,839	21,640	%
Univ. of North Dakota, Grand Forks	7,015	7,796	%	11,615	2,728	%
Ohio State Univ., Columbus	10,485	11,910	%	19,251	21,333	%
Ohio Univ., Athens	11,769	13,113	%	17,838	20,595	%
Univ. of Oklahoma, Norman	7,616	7,890	%	12,340	13,108	%
Univ. of Oregon, Eugene <sup>3</sup>	10,219	10,646	%	20,641	22,175	%
Pennsylvania State Univ., Univ. Park	12,696	14,042	%	20,822	23,270	%
Univ. of Rhode Island, Kingston	12,372	13,215	%	21,150	22,685	%
Univ. of South Carolina, Columbia	8,206	9,128	%	15,146	17,248	%
Clemson Univ., Clemson, S.C.	9,022	10,288	%	15,816	17,386	%
Univ. of South Dakota, Vermillion	7,035	7,451	%	11,391	11,984	%
The Univ. of Tennessee, Knoxville	8,126	8,756	%	15,912	17,108	%
Texas A&M Univ., College Station	8,984	10,156	%	14,470	15,824	%
Univ. of Texas, Austin <sup>4</sup>	9,974	10,555	%	16,304	17,095	%
Utah State Univ., Logan	6,770	7,078	%	12,078	12,379	%



University	In-state students			Out-of-state students		
	2001-02	2002-03	Chg.	2001-02	2002-03	Chg.
Univ. of Vermont, Burlington	14,761	15,352	%	26,821	27,842	%
Univ. of Virginia, Charlottesville	9,356	10,011	%	23,388	25,221	%
Virginia Polytechnic Institute and State Univ., Blacksburg	7,636	8,006	%	16,460	17,622	%
Univ. of Washington, Seattle	10,355	11,206	%	19,630	21,907	%
Washington State Univ., Pullman	9,935	10,216	%	17,316	17,966	%
West Virginia Univ., Morgantown	8,304	8,812	%	14,188	15,282	%
Univ. of Wisconsin, Madison	9,789	10,410	%	21,849	24,330	%
Univ. of Wyoming, Laramie	7,200	7,737	%	12,672	13,997	%
<b>Average</b>	<b>\$9,517</b>	<b>\$10,280</b>	<b>%</b>	<b>\$17,283</b>	<b>\$18,769</b>	<b>%</b>

1 – Does not include major-specific fees

2 – 2002-2003 data pending approval by North Carolina General Assembly

3 – Maximum. 15% discount for late-afternoon courses.

4 – Average. Fees depend on program enrollment.

Source: USA TODAY research

## Public universities raise tuition, fees — and ire

NEWS SECTION - THURSDAY - AUGUST 8, 2002 - PAGE 1A

By Mary Beth Marklein

USA TODAY

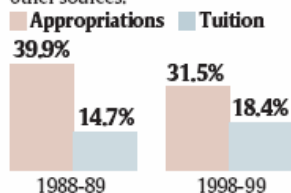
Public university students nationwide are likely to face larger classes, longer lines and fewer course options when they return to campus in a few weeks.

And they'll be paying more for it. In all but a handful of states, tuition is going up at four-year public universities, which educate 40% — the largest share — of the nation's 15 million college students.

Blame it on cuts in state funding, which have forced public institutions in many states to begin the new academic year with less money than they had last year. Forget lofty ideas about enhancing quality; many university leaders say they are just trying to get by as best they can.

### Where colleges' money comes from

Tuition became a larger share of public university operating budgets in the 1990s, and state funding became a smaller share. State universities also rely more on grants, endowment earnings and other sources.



Source: American Association of State Colleges and Universities, 2001

By Julie Snider, USA TODAY

Most institutions have held tuition and fee increases to single digits, but some hikes are eye-popping. University of Kansas students in Lawrence are getting hit with a 21% increase. The price tag for freshmen at Texas A&M University is up 26%. Students at the University of South

Carolina in Columbia will pay 17% more than last year.

That state funding for higher education gets slashed when times are tough comes as no surprise to those educators who have been through recessions before. That's because states, which are required to balance their budgets each year, are not legally obligated to fund higher education. And, unlike Medicaid and elementary and secondary education, which compete with universities for funding, higher education has a convenient alternative source of revenue: students and their families.

"As much as legislators don't like raising tuition, they know it's their escape hatch," says Travis Reindl, a policy analyst at the American Association of State Colleges and Universities in Washington, D.C.

Bulging enrollments in many states are straining budgets further. Even though more students bring more tuition income, the revenue gained in most cases is merely replacing funds lost to state cuts rather than adding value.

And if institutions think they're stretched to capacity now, just wait a few years. The federal government projects that enrollment at two- and four-year colleges will grow by 2 million or more by 2011. The largest share will be low-income students, many of them minorities and the first in their families to aspire to college.

"If past is prologue, they're going to need financial aid and basic skills remediation," two

more budget-drainers, says Jane Wellman, a policy analyst with the Institute for Higher Education Policy in Washington. And, she and others say, public universities have a poor track record in managing resources for the long term.

Just a few years ago, these higher-education institutions were feasting on some of their strongest state appropriations ever, but they should have been squirreling some away, Wellman says. "It's a binge diet," she says. "They carbo-load, and then they crash diet."

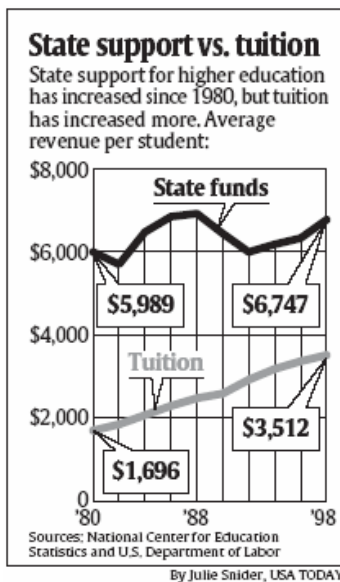
### Still a bargain

Most universities have responded as they did in past recessions — freezing salaries, delaying capital projects, offering early retirement. But some universities are talking about reducing faculty positions and cutting majors.

At the University of Iowa, where the legislature has trimmed \$56 million in funding over the past two years, "some classes simply won't get taught, and I hope that's the limit of it," says engineering professor Wilfrid Nixon, who found faculty discussions so depressing that he coordinated a Budget-Cut Bake Sale to boost morale. The event raised \$820, which was added to a scholarship fund for students — "the people getting squeezed most in all of this," Nixon says. Tuition will go up 19%.

Not all state schools are increasing tuition. In New York, one of seven states that did not report a budget shortfall in the

last fiscal year, the state university system governing board and legislators honored Gov. George Pataki's request that tuition remain flat, the seventh straight year with no increase. In Louisiana, where a fuel-producing economy is powering an upswing as other state economies falter, the legislature increased higher education appropriations 13.4% in the last fiscal year — nearly triple the 4.6% increase nationwide. Public university tuitions there will increase 3%.



And, compared with the cost of attending a private college, an education at a public institution is still a bargain. Last year, annual tuition and fees for a four-year public university averaged \$3,754 for state residents compared with \$17,123 for a private college, says a College Board report. With room and board, those figures climbed to \$9,008 at state universities and \$23,578 at private institutions.

At the University of Iowa, tuition, fees, room and board for the coming year cost

\$9,631, up \$1,438, or 18%, from \$8,193 last year. In contrast, the sticker price at Grinnell College, a private school about 65 miles west of Iowa City, will total \$29,860, up 5.5% from last year. "When you're a parent, you have to rationalize these things," says Patrick Arnold of Bettendorf, Iowa, who has three daughters in college, two at the University of Iowa. The way he sees it, "I'm getting about as good a deal as I can get."

Arnold credits relatively low tuitions, academic scholarships and other cost savings, including two daughters who live at home, with averting the need for loans.

#### Neediest students hurt

Queries about aid based on a student's financial need have remained steady at the campus, with about half of undergraduates filling out the federal application form that determines how much a family can pay, says financial-aid director Mark Warner.

More notable, he says, is the jump in interest in federal loan programs, including loans available to parents and students regardless of whether their income is low enough to qualify for need-based aid. To accommodate the increased traffic, he has beefed up his staff in recent years. One bonus with a weak economy is low interest rates — for student loans, they're as low as 4.06%.

Some institutions have promised to siphon part of the revenue from tuition increases into aid for students who have trouble paying the bills. The University of Kansas is investing \$1.5 million, or about

20% of the revenue raised by the undergraduate tuition increase, into needbased aid, the first time a tuition hike has included such funding. About 3,036 of 19,000 undergraduates will get awards of up to \$500 a year, enough to cover most of the \$600 increase.

As for state support, the most recent data available, for 2000-2001, show a 14.5% increase nationwide from the previous year in spending on financial aid.

But with the steady erosion of fiscal resources, public funding in more recent years "is not going to be as bright," says Jim Garcia, president of the National Association of State Student Grant and Aid Programs. Illinois and Connecticut recently reduced funding for state scholarship programs.

Also, the fastest-growing type of state award is aid based on a student's academic achievement, a trend that concerns public-policy analysts who argue that the nation's neediest students risk being shut out of a college education.

#### Enrollment boom

Patrick Callan, president of the National Center for Public Policy and Higher Education in San Jose, Calif., notes a painful irony in university budgeting: The steepest tuition increases of the past 20 years have occurred during recessions, when family incomes are declining or flat and unemployment is up.

"States are hurting for money, but students and families are, too," he says.



Nor is access an issue of affordability alone. Part of the current enrollment boom has to do with the slow economy and Sept. 11, both of which, experts say, have prompted more laid-off workers to return to college and many younger students to attend schools that are less expensive and closer to home.

Now, their capacities tested by soaring enrollments, some public institutions are raising admissions standards as a way to control size.

Doing so forces students to move on to schools with lesser academic requirements, but space is getting limited there, too. In some states, including Illinois and California, overcrowded community colleges, founded on the premise that any student who wanted to could enroll, are capping enrollments, effectively turning some people away.

The crunch is inspiring some experimentation. The University of Oregon, facing budget cuts and a record enrollment of about 20,300 students this fall, will offer a plan that encourages students to take classes during non-peak times as a way to accommodate more students. Tuition will go up for classes held before 3 p.m. But students will get a 15% discount on courses that meet after 3 p.m., when enrollments tend to be lower.

A number of institutions, including flagship campuses in Maryland, Minnesota and Iowa,

offer incentives to push students through their studies as quickly as possible. At Texas A&M University, for instance, certain undergraduates can get a \$1,000 rebate after graduation if they take no more than three credit hours beyond the minimum required to earn their degree

Utah State University guarantees that incoming students who agree to certain stipulations will graduate within four years. If the university can't fulfill the contract, it will cover tuition and fees for any additional terms a student must enroll. At the same time, it slaps a tax on anyone who takes the same class three times or those who take 35% more classes than are required to graduate.

#### **In a hurry**

Such plans are aimed at discouraging students from dallying. But the once standard expectation that a student would spend four years on campus is becoming increasingly uncommon, not because of dawdlers but because more students are working and going to school, and because options for taking certain required courses are limited — often because of budget cuts.

Even at schools without such incentives, though, some students want to hurry things along.

"The tuition hike is just more motivation to get out faster," says Hannah Burke, 21, a communication arts major at

the University of Wisconsin-Madison. She took courses this summer in hopes of completing her degree by next spring. "I'm definitely hustling to graduate for sure in four years because I don't want to be around for another year," she says.

As a non-resident from Pittsburgh, Burke will see her tuition increase 13%, while state residents pay 8% more. Like many students, she is resigned to the higher charge, but the hikes infuriated student government leaders, who last spring organized a march to the state Capitol to protest.

Elsewhere, six University of Minnesota students, unhappy about a second year of double-digit tuition increases, are organizing a get-out-the-vote campaign to grab the attention of lawmakers.

And University of Kansas student leaders say they will be watching to see that quality doesn't wane. Students are "going to be asking, and rightfully so, how am I benefiting as a result of this?" says student body president Jonathan Ng, 21.

But he and other student leaders also say they see no alternative but to pay more.

"It's going to make it harder" for students, says Neala Arnold, 21, an education major at the University of Iowa who was recently appointed to the board overseeing Iowa's public universities. But "as long as the state is going to withdraw support, I think it's necessary that the money comes in somewhere."



## Grants more than offset soaring university tuition

NEWS SECTION - MONDAY - JUNE 28, 2004 - PAGE 4A

By Dennis Cauchon  
USA TODAY

King Alexander, president of Murray State University in Kentucky, wants the world to know how many universities set tuition prices. It works like this:

1. The university raises its official tuition price.
2. The higher tuition qualifies many students for bigger federal and state grants, which are passed on to the school.
3. The university writes a "scholarship" to cover the rest of the tuition hike, so many students don't actually pay more.

"It is a shell game, pure and simple," Alexander says. "A lot of schools set tuition prices to maximize grant money and then use institutional (financial) aid — which isn't real money — to set the real tuition."

Alexander estimates that 28% of the 10,000 students at his public university in Murray, Ky., would get more aid if it raised its official tuition price and then gave scholarships as discounts.

The sticker price of college tuition has soared in recent years, causing an outcry from students and families. Nearly every school has raised tuition. The published price of tuition rose 11% last year at four-year public universities, the College Board reports.

But the spotlight on official tuition prices has left most people in the dark about the real story: For most students, it's a lot cheaper to go to a four-year public university

today than it was just six years ago.

Congress and state legislatures have flooded middle-class families with tax breaks and grants that pushed financial aid — excluding loans — to a record \$49 billion in 2003. That's \$22 billion more than in 1998. Result: The actual amount paid in tuition and fees at four-year public universities fell 32% from 1998 through 2003. At private colleges, aid limited tuition increases to about 1% a year during the period.

The misconception that college is becoming less affordable starts with a misunderstood number: tuition price.

The published cost is like the most expensive seat on an airline: Few people pay full price. Still, the sticker price is crucial to the complex, secretive pricing strategies in higher education.

Federal Pell grants, the nation's biggest financial aid program for college students, distribute \$12 billion annually based on a formula that increases grants when tuition is higher. Many state grant programs also do this.

But that's not the only reason advertised tuition prices are on the rise.

High tuition carries prestige, especially at top schools, and huge scholarships are a powerful tool to attract students. Private schools have used this strategy for years.

"The private-school model is based on 'perceived value,' and high tuition makes people think a school has a lot to offer," says James Garland, president of Miami University in Oxford, Ohio.

Miami University, a well-regarded public school, will move to the private-school tuition model this fall: a high list price and big scholarships. The university raised instate tuition to match out-of-state tuition, \$19,718. It then will give students from Ohio automatic scholarships of \$5,000 to \$6,200 to make up the difference.

Why not just charge less for tuition? Garland says the high price makes students realize the value of their education. Despite the tuition hike — or perhaps because of it — the university received a record 15,000 applications for 3,500 spots in the next freshman class.

Garland says the private-school model lets colleges charge wealthier students more and use the money for extra aid to low-income students.

The nation's most selective schools always have been aggressive about raising published prices to maximize what they receive from wealthy students.

Harvard University charges \$39,880 for tuition, room and board but gives financial aid to 70% of students, including 3,100 students from families earning more than \$100,000 a





year. In February, Harvard announced that parents earning \$40,000 or less won't have to pay any tuition if their children are accepted by the school. The plan will add just \$2 million to Harvard's \$80 million financial aid budget. Its real purpose is to demystify pricing for poor students.

"The word hasn't been getting out that low-income students can afford to come here, so we decided to make the message clear," says Sally Donahue, Harvard financial aid director.

Mark Yudof, chancellor of the University of Texas system, says legislators now prefer that higher-education subsidies go to students and families rather than directly to universities. He says government support for higher education is being refashioned into a national voucher system: Students have generous government education benefits that can be spent at any school.

"We're subsidizing college education today through the tax system and grants, rather than through aid to universities," Yudof says. "Higher education has been converted into an entitlement program for the middle class."

### Tax breaks, aid lighten the load

The average cost of going to college has fallen dramatically since 1998 because of tax breaks and increases in financial aid.

#### Tax breaks:

- **HOPE Scholarship Credit.** Started in 1998, it reduces federal income taxes by up to \$1,500 for every college student in a family. The full tax break is available for single people with adjusted gross income up to \$41,000 and married couples with income up to \$83,000. Partial credits are available for incomes up to \$51,000 for single filers and \$103,000 for married couples. The credit can be taken only for the first two years of college.
- **Lifetime Learning Credit.** Started in 1998, it reduces taxes by up to \$2,000 per family. The income limits are the same as for the HOPE tax credit. The Lifetime Learning Credit can be taken for an unlimited number of years. The HOPE and Lifetime Learning credits cannot be taken in the same year, so taxpayers must compute which one saves them more.
- **Tuition tax deduction.** Approved in 2001, it allows taxpayers to deduct up to \$4,000 from taxable income this year for money spent on tuition and fees. The full deduction is available for single people earning up to \$65,000 in adjusted gross income and married couples earning up to \$130,000. Partial deductions are available for married couples earning up to \$160,000.

#### Government grants:

- **Pell grants.** Created in 1973, Pell grants provide money to needy college students. Maximum award: \$4,050. The average income for families receiving Pell grants was \$24,578 in 2003. Eligibility is based on a complex formula that considers family income and a school's tuition.
- **State aid.** States awarded \$6.9 billion in aid last year -- an average of \$467 per student. Requirements vary from state to state.

By Dennis Cauchon



**Reading Comprehension:**

**Article: “Public universities raise tuition, fees – and ire”**

**Q. What is the primary factor for the current increase of college/university costs?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. Although most colleges and universities have kept increases to single digits, which universities show some of the larger increases?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. Why is increased enrollment putting a strain on college and university budgets?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. Even with the substantial increases in tuition and fees, why does the article propose that a public college or university education is still a bargain?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. What is the University of Kansas doing with a portion of their tuition increase?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. What is another factor adding to the increase in college and university enrollments?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. What are some of the other ways colleges and universities have increased income without general tuition hikes?**

A. \_\_\_\_\_  
\_\_\_\_\_

**Article: “Grants more than offset soaring university tuition”**

**Q. Explain what the article means when it states: “For most students, it’s a lot cheaper to go to a four-year public university today than it was just six years ago.”**

A. \_\_\_\_\_  
\_\_\_\_\_

**Q. Why supplement tuition with tax breaks and grants? Why not just charge less for tuition?**

A. \_\_\_\_\_  
\_\_\_\_\_