



Appendix 1

What Math/Test-taking Skills Can You Access?

Practice Test PA Items	Accessible Math Content	Learning Skill	Test-taking Skill
<p>1. Kelly's goal is to average \$25,000 per month in sales for the first three months of the year. Her sales for January and February are shown in the graph below. To reach her goal, what is the minimum amount of sales Kelly must make in March?</p>	<ul style="list-style-type: none"> - Informational graphs (Use variation) - Operation sense (+,-) - Data Analysis (mean) 	Careful reading of labels on graphs.	Standard answer grid (with variation)
<p>2. Ms. Nguyen is a real estate agent. One of her clients is considering buying a house in the Silver Lakes area, where 6 houses have recently sold for the following amounts: \$160,000; \$150,000; \$185,000; \$180,000; \$145,000; \$190,000. What should Ms. Nguyen report as the MEDIAN price of these houses?</p>	<ul style="list-style-type: none"> - Data Analysis (median) 	Compare definitions to arrive at meaning. Draw sketch.	Use formulas page.
<p>3. If $3x - 6 = 12$, what is the value of x? Mark your answer in the circles in the grid on your answer sheet.</p>	<ul style="list-style-type: none"> - Algebra/Equations 	<ul style="list-style-type: none"> - Check answer using truth of statement. - Visualize concepts. 	- Standard answer grid
<p>4. What does the line of best fit predict the typing speed, in words per minute, will be for an employee who attends eight weeks of practice? Mark your answer in the circles in the grid.</p>	<ul style="list-style-type: none"> - Graphing/ coordinate - Data Analysis 	Focus on relevant information	<ul style="list-style-type: none"> - Standard answer grid - Don't panic at an unfamiliar concept.
<p>5. Based on the line of best fit, what would be the approximate typing speed, in words per minute, of a person who had not practiced at all?</p>	<ul style="list-style-type: none"> - Graphing/Coordinate - y-intercept - interpolation 	Derive meaning of unfamiliar words by the context surrounding them.	Use possible answer choices



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<p>6. The slope of the line of best fit represents the increase in words per minute for each additional week of practice. Based on the slope of the line, by how many words per minute can an employee expect to increase her or his speed for each additional week of practice?</p>	<ul style="list-style-type: none"> - Graphing/Coordinate - Slope of line - Rates/constant change - Algebra (subscripts) 	<p>Construct a web of connecting ideas.</p>	<p>Use the formulas page.</p>
<p>7. Electric switches that regularly sell for \$0.69 each are advertised this week at 5 for \$2.75. How much is saved by purchasing 5 switches at the sale price rather than at the regular price?</p>	<ul style="list-style-type: none"> - Rates - Operation sense (x,-) 	<p>Use contextual experience to help solve problems.</p>	<ul style="list-style-type: none"> - Estimation - Check answer.
<p>8. Leg XY of the right triangle shown in the diagram below is twice as long as leg YZ. If the area of the triangle is 36 cm², what is the length, in cm, of leg XY?</p>	<ul style="list-style-type: none"> - Geometry/Area - Square root - Algebra 		<ul style="list-style-type: none"> - Use the formulas page - Use possible answer choices.
<p>9. The standard formula used by mechanics to find the length (L) of a fan belt of a car is as follows</p> $L = 2C + \frac{11(D + d)}{7} + \frac{(D - d)^2}{4C}$ <p>where <i>D</i> and <i>d</i> are the diameters of the wheels around which the belt runs, and <i>C</i> is the distance between the centers of the wheels.</p> <p>What is <i>L</i> (in inches) if <i>D</i> = 12 inches, <i>d</i> = 2 inches, and <i>C</i> = 25 inches?</p>	<ul style="list-style-type: none"> - Algebra - exponents - order of operations 	<p>Calculator can sometimes be a hindrance.</p> <p>Break problem into parts.</p>	<p>Don't panic.</p>



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10. Juanita had her car windshield replaced at a cost of \$250. After a \$50 deductible is applied (i.e., Juanita pays the first \$50,) her insurance company will pay 80 percent of the remaining balance. In dollars, how much will the company pay?	- Fractions, Proportions, Percents	- Can use own invented methods to solve.	- Standard answer grid.
11. The dimensions of the rectangle shown below are $2x$ and $3x$. How many square units are in its area?	- Algebra - Geometry/Area		Use formulas page
12. Susan left \$650 in a savings account for one year. At the end of that time she received an interest credit of 5%. Then she withdrew all of her money and had to pay a service charge of \$1.75. How much money did she have after paying the service charge?	- Fractions, Proportions, Percents	Break multi-step problems down into simpler steps.	
13. The mean (average) weight of 5 boys is 160 pounds. If three of the boys weigh 152, 158, and 168 pounds respectively, which of the following could be the weights, in pounds, of the other two boys?	- Data Analysis (mean) - Algebra	Break multi-step problem down into simpler parts.	Use formulas page
14. The scale on a hiker’s map states that 1 inch = 2000 feet. Anna wants to know how far it is to her next campsite. On the map, the next campsite is 5 inches from her present location. What is the actual distance, in feet, between Anna’s present location and her next campsite?	- Rates - Proportions	Use contextual experience.	



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<p>15. The graph below shows the expected rainfall from a hurricane, based on the speed at which the hurricane is moving. Based on the graph, what would be the approximate amount of rainfall, in inches, if a hurricane moves at 12 mph?</p>	<ul style="list-style-type: none"> - Graphs (Informational) - Interpolating with both scales. - Change not constant. 	<p>Careful reading of labels on graphs</p>	<ul style="list-style-type: none"> - Estimation - Use answer choices.
<p>16. A company charges \$60 per day plus \$0.50 per mile for truck rentals. If Greg rents a truck for 3 days and drives it a total of 150 miles, what will the company charge?</p>	<ul style="list-style-type: none"> - Rates - Operation sense (x,+) 	<ul style="list-style-type: none"> - Use context experience. - Break multi-step problem down into simpler steps. 	<ul style="list-style-type: none"> - Estimate
<p>17. For the right triangle shown in the diagram below, angle A measures 90° and sides AB and AC have the same length. What is the measure of angle C?</p>	<ul style="list-style-type: none"> - Geometry/Triangles - Angle sum - Measure of angles - Isosceles 		<p>Guess when necessary.</p>
<p>18. A carpenter is making a larger triangular brace similar to the one shown below. The base of the new brace is 36 inches. What is the length, in inches, of side b, if the triangles are similar? Mark your answer in the grid.</p>	<ul style="list-style-type: none"> - Proportions-similar figures - Geometry/Pythagorean theorem (use variation) 	<ul style="list-style-type: none"> - Make sense of formula with sketches or examples. 	<ul style="list-style-type: none"> - Use formulas page.
<p>19. To rent a ball field for a game costs a \$300 basic fee plus a \$2 fee per person. If x persons attend the game, which equation can be used to find T, the total cost of renting the ball field?</p>	<ul style="list-style-type: none"> - Algebra/ variables - Mathematize - rates 	<p>Substitute easy numbers for the variable.</p>	<ul style="list-style-type: none"> - Set-up item



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20. When none of the games has been sold, the revenue from sales will be zero. At the same time, the cost of production is expected to be approximately \$150,000. Why might this be true?	<ul style="list-style-type: none"> - Graphs/Informational - y-intercept - story of graph 	Focus on relevant information.	Extraneous information
21. Based on market surveys, the cost of production is eventually projected to be greater than the revenue from sales. The graph shows that this is likely to occur after approximately how many games have been produced?	<ul style="list-style-type: none"> - Graphs/Informational - points of intersection - Approximate value - story of graph - change illustrated 	Focus on relevant information.	<ul style="list-style-type: none"> - Estimate - Extraneous information
22. The graph of a circle is shown on the grid below. What point is the location of the center of the circle? Mark your answer on the coordinate plane grid.	<ul style="list-style-type: none"> - Graphs/Coordinate - Circle characteristics - Points on coordinate plane - Negative numbers on a number line - Subtracting to find difference between signed numbers. 		- Coordinate plane grid
23. Julio invested a sum of money at 6% interest. Krista invested \$200 less than Julio, but her bank paid her 9% interest. After one year, what was the DIFFERENCE between the amount of interest Krista had earned and the amount of interest Julio had earned?	<ul style="list-style-type: none"> - Percent - Interest formula 	Be careful when guessing.	Not enough information



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<p>24. Carpenters earn an average of \$1120 less per month than designers at a furniture factory in Smithville. The factory employs 3 designers and 15 carpenters. Let x represent the average monthly pay of a designer.</p> <p>Which of the following functions correctly shows the relationship between the monthly payroll (P) and the wages of these employees? - Algebra/variables</p>	<ul style="list-style-type: none">- Mathematize- Operation sense (+,x)- Rates	<p>Use easy numbers in place of variables.</p>	<p>Set-up item</p>
<p>25. The public transportation system in Central City charges \$90 for a 2-ft. by 3-ft. rectangular advertising space in its buses.</p> <p>If the price (x) of an ad is proportional to its AREA, which of the following expressions correctly determines the price (x) for a 4-ft. by 5-ft. advertisement?</p>	<ul style="list-style-type: none">- Proportions- Mathematize- Equivalent representations- Geometry/area	<p>Be flexible to accommodate other correct methods of solution.</p>	<p>Set-up item</p>