

Rapid Fire True/false

1) $\sqrt{x} > x$ for $0 < x < 1$

2) $\sqrt{\frac{1}{x}} > \frac{1}{x}$ for $0 < x < 1$

3) $\sqrt{x} < \frac{1}{x}$ for $0 < x < 1$

4) $\sqrt{x^6} = 2x(x^2 - 1) + 2x - x^3$

5) 2.11011101110 is irrational

6) $2.123456789 \overline{10123456789}$ is rational

7) $\pi = \frac{22}{7}$ exactly.

8) $2x^2 + 8x + 8 = 2(x+2)^2$

9) $|x| < \sqrt{x}$ for $0 < x < 1$

10) $(6^2)^3 = 6^2 \cdot 6^3$

11) $(2^2)^2 = 2^2 \cdot 2^2$

12) $\sqrt{x}$ is a real number for all values of x such that x is an integer

13) $y^2 - 1 = (y+1)(y-1)$ where $y = x+1$ for $x > 0$

14) if $y^2 = x$ Then $y > 0$ if $x > 0$

15) if $\frac{y}{x} < x$ then $y < x^2$ for $-1 < x < 0$

16) $\frac{x}{-2} < y \Rightarrow x > -2y$

17) $\frac{x}{2} < y \Rightarrow x > 2y$

18) $\sqrt{x}$ is always > 0 for all values $x > 0$

19) $\frac{2}{x+1} = \frac{2}{x} + \frac{2}{1} - 2 - \frac{1}{x/2} + \frac{2}{x+1}$

20) $\frac{1 + \frac{1}{x}}{1 - \frac{1}{x}} = \frac{x+1}{x-1}$

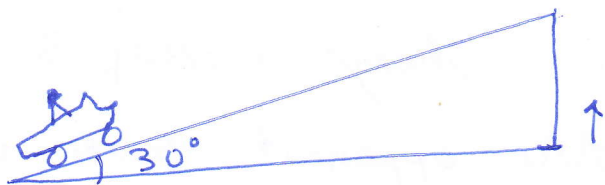
21) Can 25 cm, 7 cm and 10 cm form the sides of a triangle?

Problems

at least

- 1) The tigers basketball team always scores at least 3 more than double the points of their opponent team in all matches. The Pigeons team is jinxed and they always score less than a third of the points scored by their opponent team. Tomorrow Tigers will play the pigeons. Find the possible scores that Tigers can get in tomorrows match.

2)



A car is going up the hill as shown above and is driving at 60 miles/hr. How much height is it gaining per hour, as it climbs that hill?

Problems

3) Draw the graph and determine the feasible region where both the inequalities are true.

$$y \geq x^2$$

$$y \leq -x^2 + 2$$

4) Factorize the following quadratic expression

$$2x^2 + x - 21$$

Problem

5) If the probability of no rain in any day of December in Tahiti is 60%, what is the probability it will rain on Dec 15th and Dec 16th?

Problems

6) If you drop a microwave oven and a tennis ball from the top of this house, which one will reach the floor faster? And approximately how much faster?