$49 + 21 = 70$

BDC

1) In the triangle above angle $B = 35$. Find the measure of angle BDC

$3x + 2x = 35$

$5x = 35$

$x = \dfrac{35}{5}$

$\boxed{x = 7}$

A) 57.6
B) 50
C) 110
D) 70

2) Which quadratic equation that has a sum of solutions -8 and the product of the solution 15

A) $x^2 + 8x + 15$

B) $3x^2 + 10x - 8$

C) $3x^2 - 10x + 8$

D) $-3x^2 - 10x - 8$

3) If $\dfrac{a}{2} = 3b$

$a = 2(3b)$

$3a + 5b = 11$ $a = 6b$

Find the value of b

$3(6b) + 5b = 11$

$18b + 5b = 11$

$23b = 11$

$b = \dfrac{11}{23}$

A) 11/22
B) 1/11
C) 1/33
D) 11/23

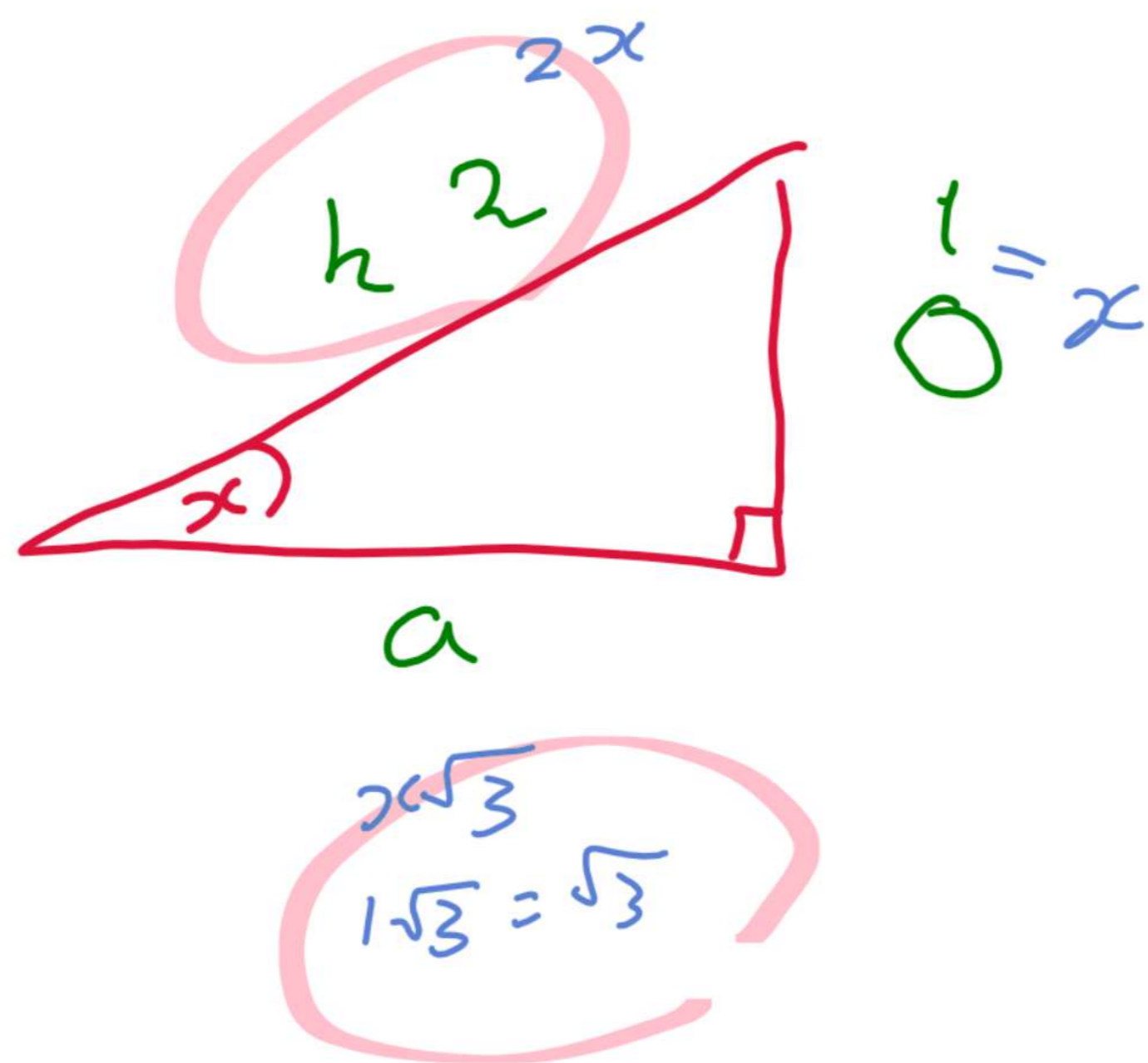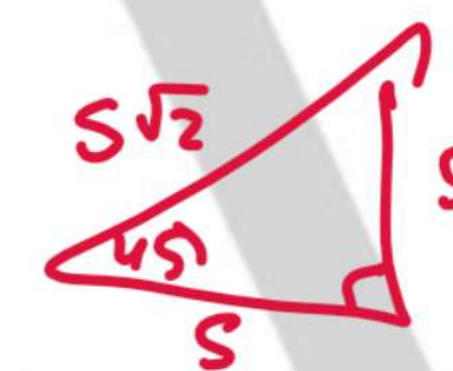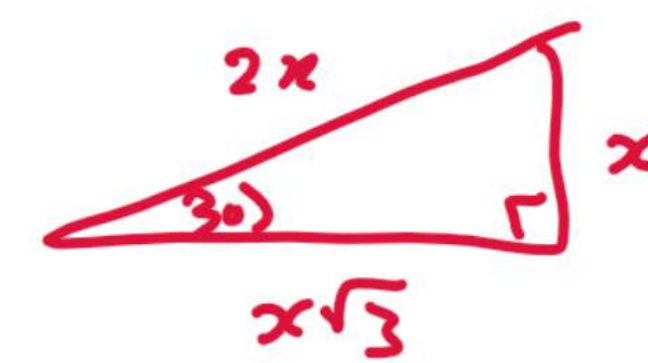*(handwritten)* $\sin x = \frac{1}{2} \frac{0}{h}$

4) If $\sin(x) = 0.5$ and $0 < x < 90$. What is the value of $\cos x$?

A) 0.5

B) -0.5

C) $\dfrac{\sqrt{3}}{2}$

D) $-\dfrac{\sqrt{3}}{2}$

(handwritten notes: triangle labeled $2x$, h 2, $\frac{1}{O}=x$, $x)$, a; $\frac{2\sqrt{3}}{1\sqrt{3}} = \sqrt{3}$; Soh Cah Toa; triangles labeled $2x$, $30)$, x, $x\sqrt{3}$; $5\sqrt{2}$, 45, S, S)

5) Which of the following is equivalent to the expression below ?

$$\frac{2x}{x^2-3x+2} + \frac{(x+5)}{(x-1)} + \frac{x-7}{x-2}$$

(handwritten annotations: $(x-2)$, $(x-1)$, $(x-2)$, $(x-1)$)

A) $\dfrac{2x^2-13x-3}{x^2-3x+2}$

B) $\dfrac{2x^2-3x-17}{x^2-3x+2}$

C) $\dfrac{2x^2-3x-3}{x^2-3x+2}$

D) $\dfrac{2x^2-5x-3}{x^2-3x+2}$

(handwritten work: $x^2-2x+5x-10$, $x^2-2x-x+2$; $x^2-x-7x+7$, $x^2-2x-x+2$; $\frac{1}{7}+\frac{4}{7}=\frac{5}{7}$; $\frac{1}{4}\times 5 + \frac{2}{5}\times 4$; $\frac{2x}{x^2-3x+2} + \frac{2x^2-5x-3}{x^2-3x+2}$; $\frac{2x^2-3x-3}{x^2-3x+2}$)

6) If $y = \dfrac{x+1}{x+4} + 1$ has a vertical asymptote $x = a$ and horizontal asymptote $y = b$.
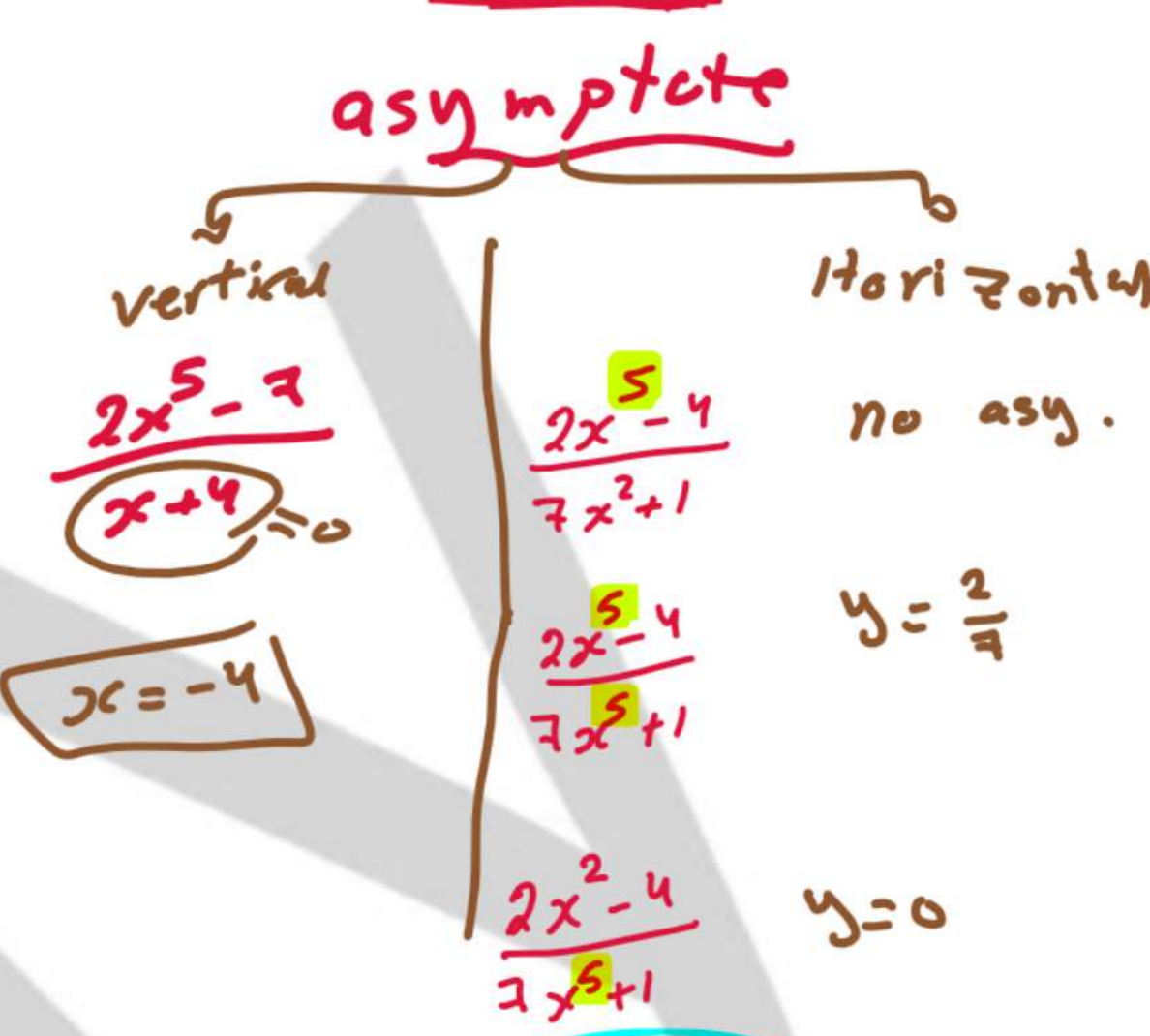
   Find $|a - b|$

   A) 5
   B) 2
   C) 4
   D) 6

Handwritten work:

$x + 4 = 0$

$x = -4$

$a = -4$

$y = \dfrac{1}{1} + 1$

$y = 2$

$b = 2$

$12 + 10 = 22$

$|a - b| = |-4 - 2| = |-6| = 6$

asymptote

vertical   Horizontal

$\dfrac{2x^5 - 7}{x + 9} = 0$ $\dfrac{2x^5 - 4}{7x^2 + 1}$ no asy.

$x = -4$ $\dfrac{2x^5 - 4}{7x^5 + 1}$ $y = \dfrac{2}{7}$

$\dfrac{2x^2 - 4}{7x^5 + 1}$ $y = 0$

7) 12 red and 10 blue balls in a bag. What is the probability select 2 red balls without replacement ?

   A) 7/36
   B) 2/7
   C) 2/22
   D) 36/121

Handwritten work:

$\text{Prob.} = \dfrac{\text{Part}}{\text{Total}}$

and ×

or +

$\dfrac{12}{22} \times \dfrac{11}{21} = \dfrac{2}{7}$

8) There is a competition. If you answered a correct question you choose a gift from 24 boxes. One of these boxes contains a car

   If a Farida answered the question correctly. What is the probability that she will get tha car ?

   A) 1/7
   B) 1/24
   C) 1/12
   D) 1/23

Handwritten work:

$\dfrac{1}{24}$

Math is Root of Knowledge

x-int
roots
sols

9) If $If x^4 + 2x^3 = 0$. How many intersection point/s with x-axis ?

$x^3 (x + 2) = 0$

A) 1

B) 4 $x^3 = 0$ $x + 2 = 0$

C) 2 $x = \sqrt[3]{0}$ $x = -2$

D) 0 $x = 0$

10) Find the value of $3^2 + 4 \times 3 - 3^2 + 8$

A) 18 $9 + 4 \times 3 - 9 + 8$ $2 + 5 \times 3$

B) 23

C) 17 $9 + 12 - 9 + 8$ 17 21

D) 20 20 Min Max smallest

11) If $y > x + 2$ and $2y - x \leq 2$. What is the greatest Integer possible value of x ?

A) -2 $y = x + 2$

B) -4 $2y - x = 2$

C) -3 $2(x + 2) - x = 2$

D) -5 $2x + 4 - x = 2$

            $2x - x = 2 - 4$

            $x = -2$

12) There are 3 chocolate. One is triangular plain, one rectangular plain and the third is nuts. What is the probability to eat s plain chocolate ?

A) 1/3

B) 1/2 $\dfrac{Part}{Total} = \dfrac{2}{3}$ 01070798992

C) 1

D) 2/3   01050994880