

THIS IS A NO GRAPHING CALCULATOR QUIZ

[3 POINTS] Graph the solution of the system of inequalities

$$\begin{aligned} x+2y < 4 &\rightarrow x-INT = 4 \\ y-INT &= 2 \\ x-INT &= -2 \leftarrow y-x > 2 \\ y-INT &= 2 \\ y &> x^2 \end{aligned}$$

TEST (0,0)

$$0+2(0) < 4 \text{ YES}$$

$$0-0 > 2 \text{ NO}$$

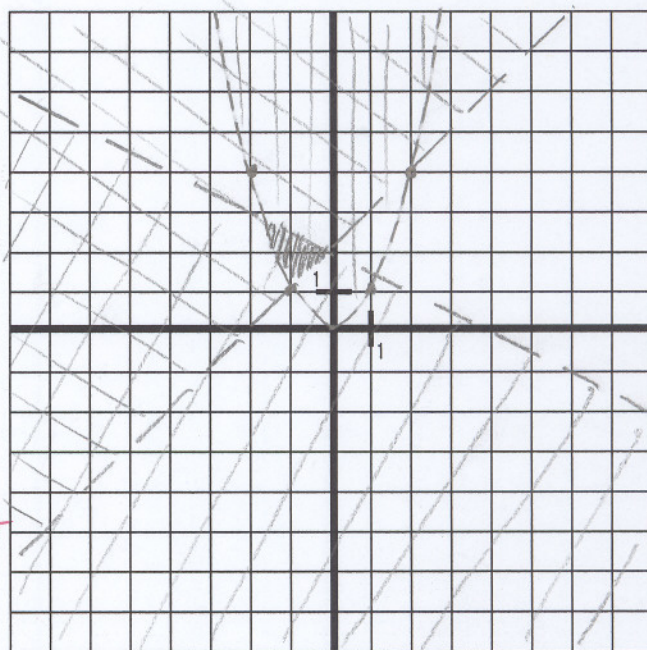
TEST (0,1)

$$1 > 0^2 \text{ YES}$$

$\frac{1}{2}$ POINT FOR EACH CORRECT GRAPH
OF LINES + PARABOLA

$\frac{1}{2}$ POINT IF ALL LINES DOTTED

1 POINT CORRECT REGION
SHADED

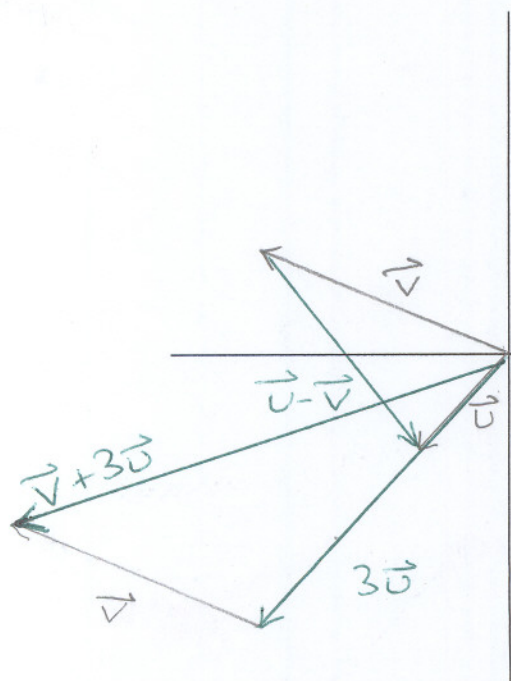


[2 POINTS] Vectors $\mathbf{u}$ and $\mathbf{v}$ are shown below. Sketch the following vectors on the same axes.

$$\begin{aligned} \mathbf{u} - \mathbf{v}, \\ 3\mathbf{u}, \\ \mathbf{v} + 3\mathbf{u} \end{aligned}$$

$\frac{1}{2}$ POINT FOR $\mathbf{u} - \mathbf{v}$
 $\frac{1}{2}$ POINT FOR $3\mathbf{u}$
1 POINT FOR $\mathbf{v} + 3\mathbf{u}$

★ NO POINTS IF VECTOR
POINTS IN WRONG (OR NO)
DIRECTION



[5 POINTS]

Find the partial fraction decomposition of $\frac{2x^3 - x^2 + x + 5}{x^2 + 3x + 2}$.

$$\begin{array}{r}
 \textcircled{2x-7}^1 \\
 x^2+3x+2 \overline{) 2x^3 - x^2 + x + 5} \\
 \underline{2x^3 + 6x^2 + 4x} \\
 -7x^2 - 3x + 5 \\
 \underline{-7x^2 - 21x - 14} \\
 \textcircled{18x + 19}^1
 \end{array}$$

$$\frac{18x+19}{x^2+3x+2} = \frac{18x+19}{(x+1)(x+2)} = \frac{A}{x+1} + \frac{B}{x+2}^{\frac{1}{2}}$$

$$18x+19 = A(x+2) + B(x+1)$$

$$x = -1:$$

$$1 = A$$

$$x = -2:$$

$$-17 = -B \Rightarrow B = 17$$

$$\textcircled{2x-7} + \textcircled{\frac{1}{x+1}}_1 + \textcircled{\frac{17}{x+2}}_1$$

 $\frac{1}{2}$