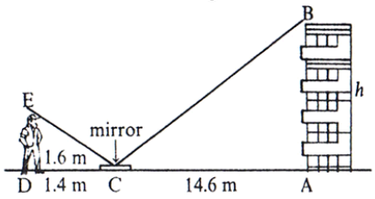
MFM 2P1

Name: _____

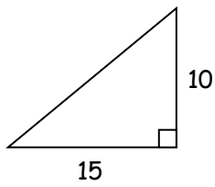
/48

Sure Bets #4 – All Topics (so far)

1. a) Use similar triangles to find x.



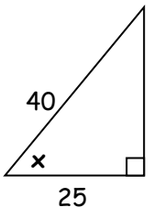
b) Use $a^2 + b^2 = c^2$ to find the missing side



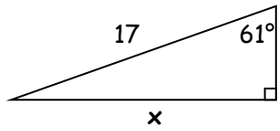
4

2. Use SOHCAHTOA to determine the missing value:

a)



b)

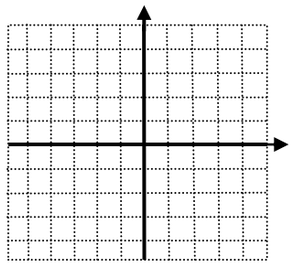


4

3. A search and rescue helicopter is flying at a height of 600 m. A campfire is spotted at an angle of depression of 15.2°. How far, along the ground, is the helicopter from the fire? Draw a diagram.

3

4. Determine the x and y-intercepts by making a table, then graph the relation $2x - 4y = 8$.



3

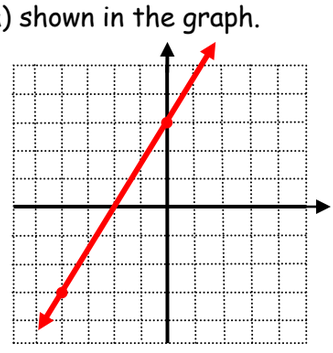
5. Sketch and label each line on the grid above.

a) $y = \frac{2}{3}x - 4$ b) $y = -3x + 5$ c) $y = -1$ d) $y = 5 - \frac{2}{5}x$

4

6. Find the equation of the line:

a) shown in the graph.



b) With a slope of -2 and passing through (4,0)

5

7. Solve each system by the given method.

a) $y = x + 5$
$y = 3x - 9$

Comparison

b) $y = 3x - 4$
$2x + 3y = -1$

Substitution

6

8. A bank teller has a total of 125 bills in a mixture of fives and tens. The total value of the money is $840. How many of each bill do they have?

x =

$$x + y = 125$$
$$5x + 10y = 840$$

y =

5

9. An emergency flare is shot vertically into the air. Its height, h, in metres, after t seconds is given by $h = -5t^2 + 60t + 2$.

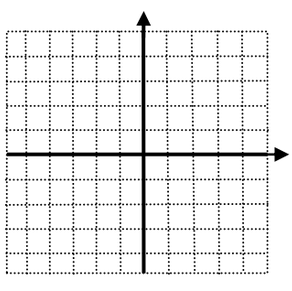
a) Use Desmos, then sketch the parabola below. Label the important points with values.
b) What is the maximum height reached by the flare? When does this happen?
c) When does the flare hit the ground?
d) From what height is the flare shot?

6

10. For the equation $y = 2x^2 - 4x$:

a) Make a table of values, then graph the relation.
b) Identify its key properties.

x	y
-2	
-1	
0	
1	
2	



Vertex:

Zeros:

Y-intercept:

AoS:

Direction of Opening:

Max/Min

8