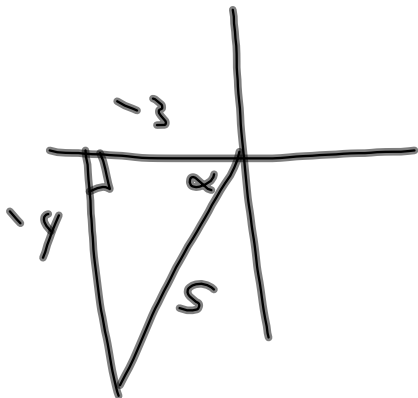
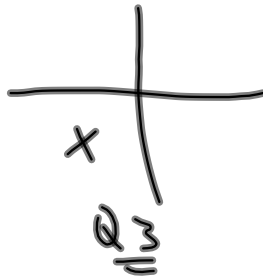


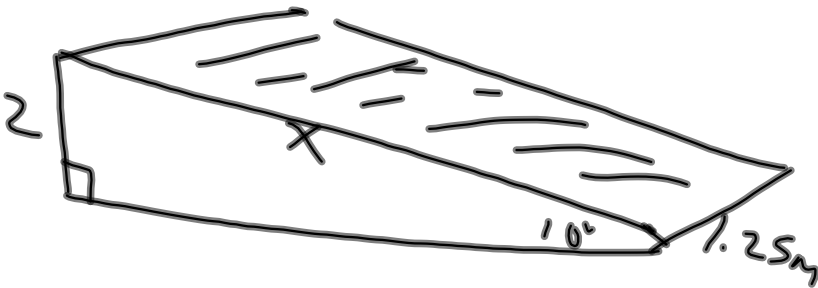
Trig Test:

M/choice

#2/ $\sin \alpha = -\frac{4}{5}$



$\tan \alpha = \frac{4}{3}$



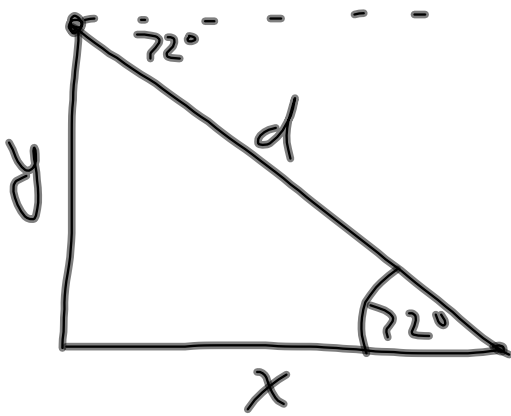
$$\sin 10^\circ = \frac{2}{x}$$

$$x = \frac{2}{\sin 10^\circ}$$

$$x = 11.5$$

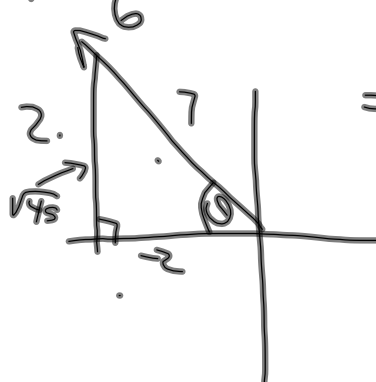
$$A = 11.5 \times 1.25$$

$$= \underline{\underline{14.4 \text{ m}^2}}$$



$$\sin 72^\circ = \frac{y}{d}$$
$$d = \frac{y}{\sin 72^\circ}$$

1. $\frac{5}{6}$

2.  = $\tan^2 \theta \csc \theta$
 $= \left(\frac{\sqrt{45}}{-2}\right)^2 \left(\frac{7}{\sqrt{45}}\right)$
 $= \left(\frac{45}{4}\right) \left(\frac{7}{\sqrt{45}}\right)$

3. (40°)

4. 20.3 m

$$= \frac{315}{4\sqrt{45}} = \frac{315}{4(3\sqrt{5})} \left(\frac{\sqrt{5}}{\sqrt{5}}\right)$$

$$= \frac{315\sqrt{5}}{60}$$

5. $B = 56^\circ$ or $B = 124^\circ$
 $A = 90^\circ$ or $A = 22^\circ$
 $a = 14.7 \text{ cm}$ or $a = 5.5 \text{ cm}$

$$= \frac{21\sqrt{5}}{4}$$

6. $A = \frac{1}{2} ab \sin \theta$

$$A = \frac{1}{2} (10)(13.5)$$

$$A = \underline{121.5 \text{ cm}^2}$$

$$x = \sqrt{10^2 + 13.5^2}$$

$$x = \underline{22.5}$$

$$\frac{\sin B}{22.5} = \frac{\sin 50^\circ}{2x}$$

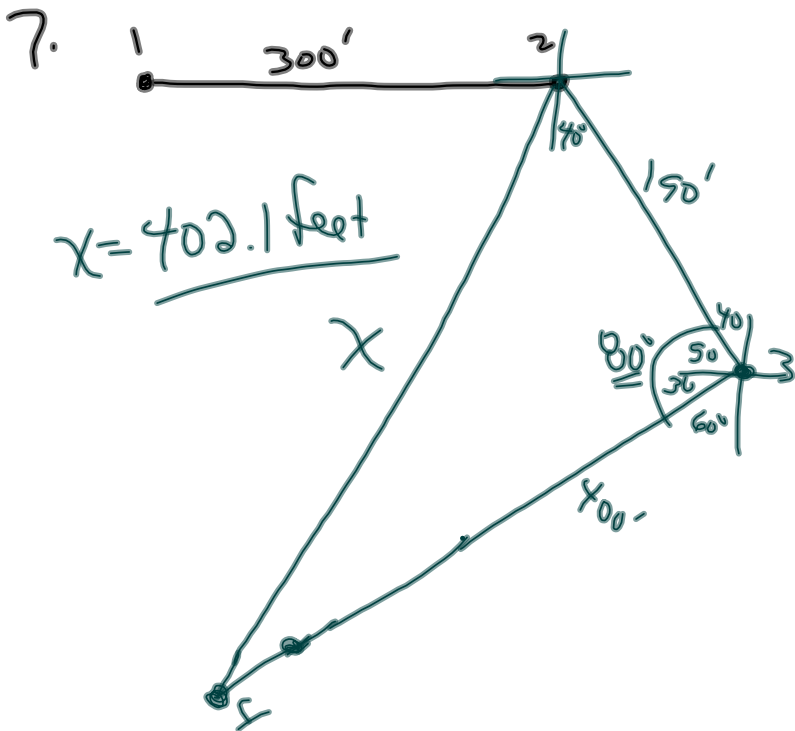
$$B = 53^\circ$$

$$\cancel{A} = 69^\circ$$

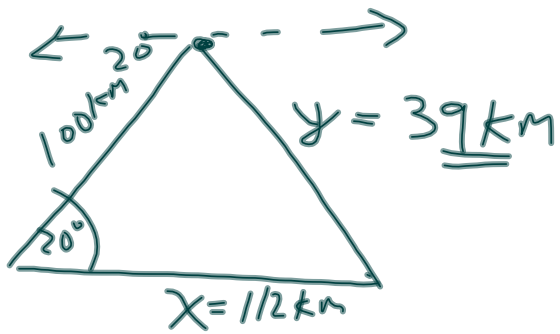
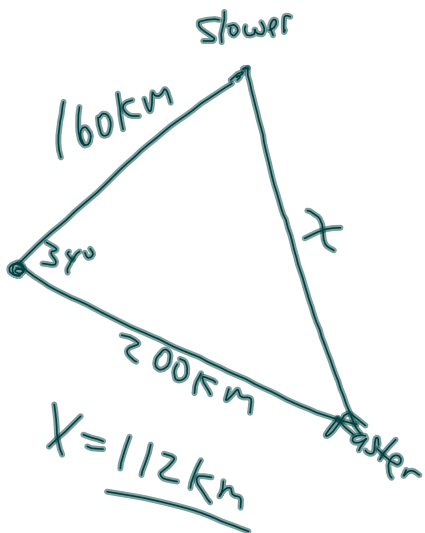
$$A = \frac{1}{2} (22.5)(24) \sin 69^\circ$$

$$= 252.1 \text{ cm}^2$$

$$\text{Total: } \underline{373.6 \text{ cm}^2}$$



Bonus



Unit 3 : Relations and Functions

Factoring Techniques

- Goal is to build upon current factoring skills and extend competency to more complex polynomial expressions.

Current Factoring Toolkit:

- 1) Common Factor
- 2) Simple Trinomials
- 3) Hard Trinomials
- 4) Difference of Squares
- 5) Perfect Square Trinomials

Factor each of the following:

$$10w^2 - 30w^8z + 15w^{12}$$

$$5w^2(2 - 6w^6z + 3w^{10})$$

\Rightarrow G.C.F

$$w^2 - 13w + 30$$

$$(w-10)(w-3)$$

Simple Trinomial

$$16a^2 - 9b^2$$

$$(4a-3b)(4a+3b)$$

\Rightarrow Diff. of Squares

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

$\xrightarrow{-24}$

$$8x^2 - 12x + 2x - 3$$

$$4x(2x-3) + 1(2x-3)$$

$$(2x-3)(4x+1) \Rightarrow$$
 Decomposition

$$81x^2 - 126xy + 49y^2$$

DNF

* $\left[\sqrt{\text{first}} \times \sqrt{\text{3rd}} \right]$ doubled

$$\cos^2 x - 5 \cos x - 14$$

$$(9x - 7y)^2$$

\Rightarrow Perfect Square Trinomial

$$M^2 - 5M - 14$$

$$(m-7)(m+2)$$

$$(\cos x - 7)(\cos x + 2)$$

$$\cos^2 x \stackrel{u_s}{=} \begin{pmatrix} \cos^2 x \\ (\cos x)^2 \end{pmatrix}$$

Practice...

Factor each of the following:



1. $10x^2y^5 + 20x^7y^3 - 25x^4y^9$

$5x^2y^3(2y^2 + 4x^5 - 5x^2y^6)$

2. $2x^2 + 15y - 5x - 6xy$

$2x^2 - 5x + 15y - 6xy$
 $x(2x - 5) - 3y(-5 + 2x)$
 $(2x - 5)(x - 3y)$
 factoring by grouping

3. $x^2 - 10x + 24$

$(x - 6)(x - 4)$

4. $m^2 + 13m - 30$

$(m + 15)(m - 2)$

5. $3m^2 - 24m - 27$

$3(m^2 - 8m - 9)$
 $3(m - 9)(m + 1)$

6. $x^2(a + 3) + 2x(a + 3) - 48(a + 3)$

$(a + 3)(x^2 + 2x - 48)$
 $(a + 3)(x + 8)(x - 6)$

Factor each of the following:

$$10w^2 - 30w^8z + 15w^{12}$$

$$5w^2(2 - 6w^6z + 3w^{10})$$

\Rightarrow G.C.F

$$w^2 - 13w + 30$$

$$(w-10)(w-3)$$

Simple Trinomial

$$16a^2 - 9b^2$$

$$(4a-3b)(4a+3b)$$

\Rightarrow Diff. of Squares

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

$$8x^2 - 12x + 2x - 3$$

$$4x(2x-3) + 1(2x-3)$$

$$(2x-3)(4x+1)$$

\Rightarrow Decomposition

$$81x^2 - 126xy + 49y^2$$

DNF

* $\left[(\sqrt{\text{first}}) \times (\sqrt{\text{3rd}}) \right]$ doubled

$$\cos^2 x - 5 \cos x - 14$$

$$(9x - 7y)^2$$

\Rightarrow Perfect Square Trinomial

$$M^2 - 5M - 14$$

$$(M-7)(M+2)$$

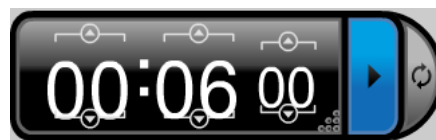
$$(\cos x - 7)(\cos x + 2)$$

$$\cos^2 x \stackrel{u.s.}{=} (\cos^2 x)$$

$$(\cos x)^2$$

Practice...

Factor each of the following:



1. $10x^2y^5 + 20x^7y^3 - 25x^4y^9$

$5x^2y^3(2y^2 + 4x^5 - 5x^2y^6)$

2. $2x^2 + 15y - 5x - 6xy$

$2x^2 - 5x + 15y - 6xy$
 $x(2x - 5) - 3y(-5 + 2x)$
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 $3(m - 9)(m + 1)$

6. $x^2(a + 3) + 2x(a + 3) - 48(a + 3)$

$(a + 3)(x^2 + 2x - 48)$
 $(a + 3)(x + 8)(x - 6)$