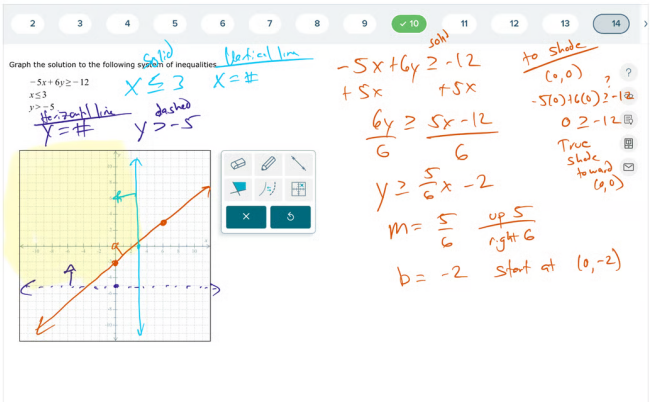
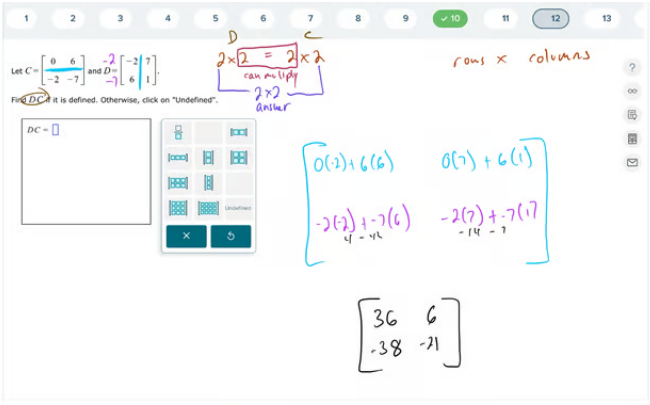
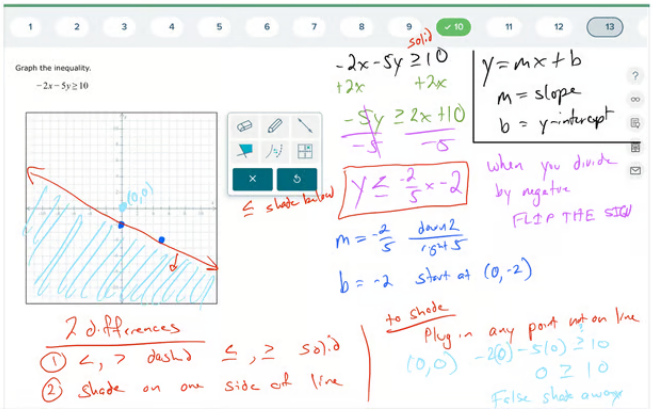
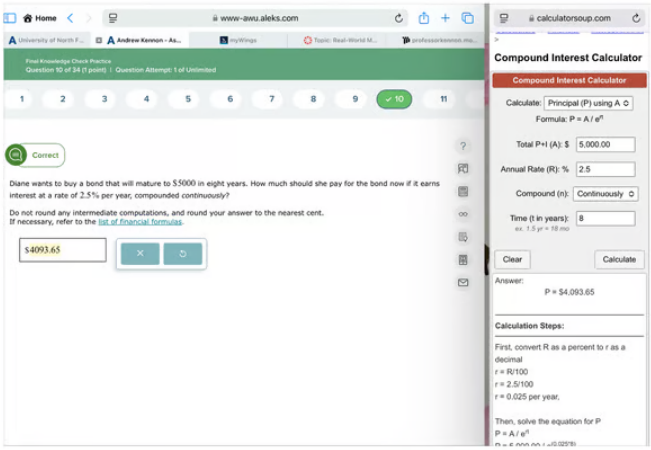
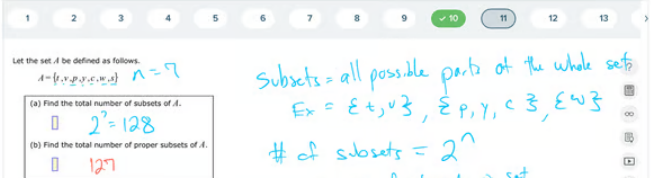
MGF Reviews /
1993 925AM (2024 Fall) Final Knowledge Check Practice











n = # of elements in ...

proper subset = all subsets except the set itself

# of proper subsets = $2^n - 1$

Final Knowledge Check Practice
Question 6 of 34 (1 point) | Question Attempt: 1 of Unlimited

1 2 3 4 5 6 7 8 9 10 11 12 13

Consider statements p and q.

p: Carlos is studying.

q: Melissa is in math class.

~ p Not in p

∨ or

∧ and

For parts (a) and (b), fill in the symbolic form. For part (c), choose the descriptive form.

Descriptive form	Symbolic form
(a) Carlos is not studying but Melissa is in math class.	~p∧q
(b) It is not the case that Melissa is in math class or Carlos is studying.	~(q∨p)
(c) (Choose one)	~q∨~p

not q and not p

Melissa is not in math class and Carlos is not studying

Final Knowledge Check Practice
Question 7 of 34 (1 point) | Question Attempt: 1 of Unlimited

1 2 3 4 5 × 6 7 8 9 10 11 12 13

Complete the following truth table. Use T for true and F for false.
You may add more columns, but those added columns will not be graded.

p	q	$p \vee q$	p	$(p \vee q) \to p$
T	T	T	T	T
T	F	T	T	T
F	T	T	F	F
F	F	F	F	T

Not Graded

V "or" only F, both F

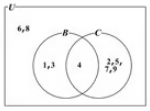
If then → only F when 1st T, 2nd F (so order matters)

rewrote p because order matters

Final Knowledge Check Practice
Question 8 of 34 (1 point) | Question Attempt: 1 of Unlimited

1 2 3 4 5 × 6 7 8 9 10 11 12 13

Here is a Venn diagram showing the sets B and C, as well as the universal set U.
(The numbers shown are elements of these sets.)

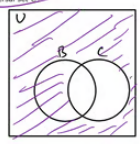


U = {1, 2, 3, 4, 5, 6, 7, 8, 9}

C' not C

C = {4, 2, 5, 7, 9}

C' = {1, 3, 6, 8}



(B ∪ C)' = {6, 8}

everything not in the circles

Find the sets below. Write each answer in roster form or as ∅.

(a) $C' =$ ☐

(b) $B \cap C =$ ☐

(c) $(B \cup C)' =$ ☐ {6, 8}

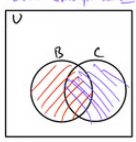
B ∧ C = {4}

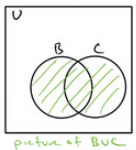
B = {1, 3, 4}

C = {2, 4, 5, 7, 9}

∧ and share

B ∧ C lines intersect when you see both lines





picture of B ∪ C

1 2 3 4 5 6 7 8 9 10 11 12 13

Set A and the universal set U are defined as follows.

$U = \{3, 4, 5, 6, 7, 8\}$

$A = \{5, 6, 8\}$

Find the following sets.
Write your answer in roster form or as ∅.

(a) $A \cup A' =$ ☐

(b) $A \cap \varnothing =$ ☐

∅ Empty Set = includes nothing

U = Universal Set = includes everything

Any set ∪ Any complement set = Universal

(a) A = {5, 6, 8}

A' = {3, 4, 7, 3}

A ∪ A' = {3, 4, 5, 6, 7, 8} = U

or bring together

(b) Anything ∧ ∅ = ∅

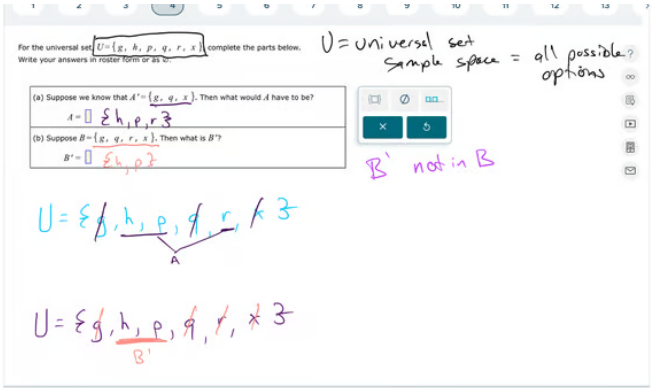
A = {5, 6, 8}

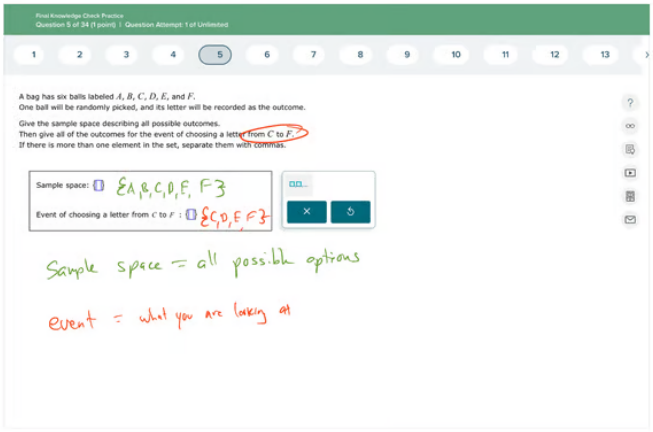
∅ = {3}

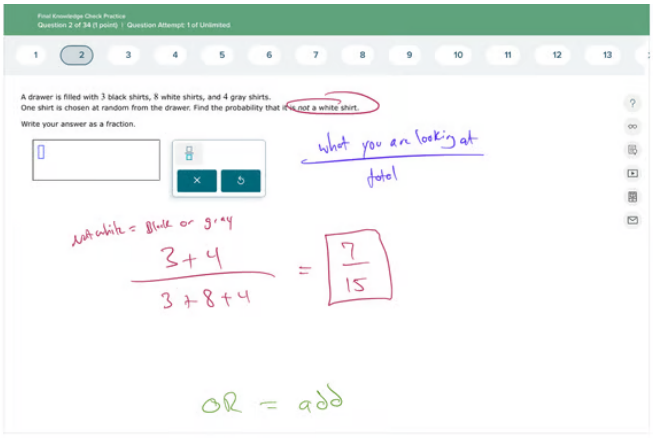
A ∧ ∅ = {3} = ∅

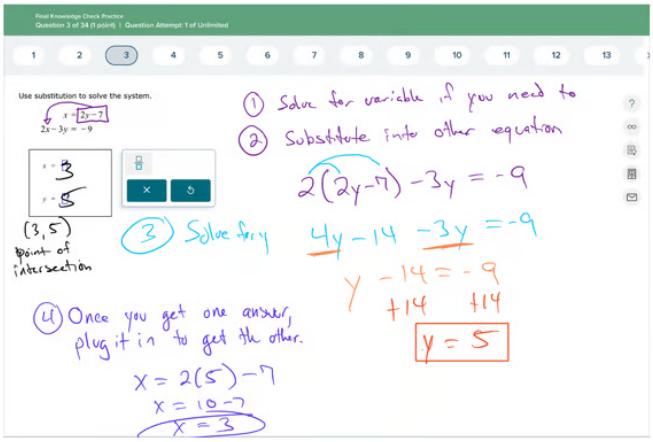
and = share

Final Knowledge Check Practice
Question 4 of 34 (1 point) | Question Attempt: 1 of Unlimited


For the universal set $U=\{g, h, p, q, r, s\}$ complete the parts below.
Write your answers in roster form or as ∅.
U = universal set
Sample space = all possible options
(a) Suppose we know that $A'=\{g, q, s\}$. Then what would A have to be?
$A=$ {h, p, r}
(b) Suppose $B=\{g, q, r, s\}$. Then what is B'?
$B'=$ {h, p}
B' not in B
U = {g, h, p, q, r, s}
A
U = {g, h, p, q, r, s}
B'


Final Knowledge Check Practice
Question 5 of 34 (1 point) | Question Attempt: 1 of Unlimited
A bag has six balls labeled A, B, C, D, E, and F.
One ball will be randomly picked, and its letter will be recorded as the outcome.
Give the sample space describing all possible outcomes.
Then give all of the outcomes for the event of choosing a letter from C to F.
If there is more than one element in the set, separate them with commas.
Sample space: {A, B, C, D, E, F}
Event of choosing a letter from C to F: {C, D, E, F}
Sample space = all possible options
event = what you are looking at


Final Knowledge Check Practice
Question 2 of 34 (1 point) | Question Attempt: 1 of Unlimited
A drawer is filled with 3 black shirts, 8 white shirts, and 4 gray shirts.
One shirt is chosen at random from the drawer. Find the probability that it is not a white shirt.
Write your answer as a fraction.
what you are looking at / total
not white = black or gray
3 + 4 / 3 + 8 + 4 = 7/15
OR = add


Final Knowledge Check Practice
Question 3 of 34 (1 point) | Question Attempt: 1 of Unlimited
Use substitution to solve the system.
x = 2y − 7
2x − 3y = −9
x = 3
y = 5
(3, 5)
point of intersection
1 Solve for variable if you need to
2 Substitute into other equation
2(2y − 7) − 3y = −9
3 Solve for y
4y − 14 − 3y = −9
y − 14 = −9
+14 +14
y = 5
4 Once you get one answer, plug it in to get the other.
x = 2(5) − 7
x = 10 − 7
x = 3