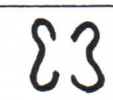
FACEing MATH™ Name: _____

Lesson 8: Solving Multi-Step Equations with Variables on Both Sides

Directions: ***Solve each equation and use a pencil to DRAW the object that corresponds with your answer. SHOW YOUR STEPS!!!***

1. $2x+7=x+3$

(a) If your answer is $x=-4$ draw the following ears.	
(b) If your answer is $x=4$ draw the following ears.	

2. $5x-3=x-12$

(a) If your answer is $x=\frac{15}{4}$ draw the following helmet.	
(b) If your answer is $x=-\frac{9}{4}$ draw the following helmet.	

3. $-3x+1=5x-7$

(a) If your answer is $x=1$ draw semi-circular eyes.	
(b) If your answer is $x=-1$ draw rectangular eyes.	

4. $-2x-3=-4x+3$

(a) If your answer is $x=-3$ draw wavy eyebrows.	
(b) If your answer is $x=3$ draw straight eyebrows.	

5. $m+3=-m-1$

(a) If your answer is $m=-2$ draw a triangular nose.	
(b) If your answer is $m=2$ draw a U-shaped nose.	

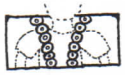
6. $12m-5=11m-5$

(a) If your answer is $m=0$ draw long, skinny rectangles under each eye.	
(b) If your answer is "*no solution*" draw long, skinny ovals under each eye.	

7. $7n+8=6n+4$

(a) If your answer is $n=4$ draw a smiling mouth.	
(b) If your answer is $n=-4$ draw a straight mouth.	

8. $-2x+3=-3x-1$

(a) If your answer is $x=2$ draw the following backpack.	
(b) If your answer is $x=-4$ draw the following backpack.	

9. $5m-9=4m+2$

(a) If your answer is $m=11$ draw the following shirt collar.	
(b) If your answer is $m=-7$ draw the following shirt collar.	

10. $-5n-9=4n+2$

(a) If your answer is $n=-\frac{9}{11}$ draw horizontal stripes on the shirt.	
(b) If your answer is $n=-\frac{11}{9}$ draw camouflage on the shirt.	

11. $2x-2=x-4$

(a) If your answer is $x=-2$ draw a scar on one arm.	
(b) If your answer is $x=-6$ draw a scar on one cheek.	

12. $m+4=-m+10$

(a) If your answer is $m=3$ draw an American flag that fills the ENTIRE background.	
(b) If your answer is $m=-3$ draw a TINY American flag in the background.	

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Directions: ***Solve each equation and COLOR the object that corresponds with your answer. SHOW YOUR STEPS!!!***

13. $2(x+1)=3x-1$

(a) If your answer is $x=3$ color the chin strap attached to the helmet black.

(b) If your answer is $x=2$ color the chin strap attached to the helmet green.

14. $3n+1=-n+2$

(a) If your answer is $n=-\frac{1}{4}$ color the helmet shades of yellow and brown.

(b) If your answer is $n=\frac{1}{4}$ color the helmet shades of green and brown.

15. $-2(x+1)=3x+1$

(a) If your answer is $x=\frac{3}{5}$ color the ears, nose, face, neck and arms brown.

(b) If your answer is $x=-\frac{3}{5}$ color the ears, nose, face, neck and arms apricot.

16. $2(x+1)+2=3x-4$

(a) If your answer is $x=8$ color the eyes blue.

(b) If your answer is $x=7$ color the eyes green.

17. $-3(2x-3)=-5x+5$

(a) If your answer is $x=-14$ outline the eyes and eyebrows in orange.

(b) If your answer is $x=4$ outline the eyes and eyebrows in black.

18. $\frac{1}{3}(6x+9)=x-5$

(a) If your answer is $x=-8$ outline the nose in black.

(b) If your answer is $x=-14$ outline the nose in orange.

19. $5(n+2)-8=2n$

(a) If your answer is $n=-\frac{2}{3}$ color the shapes under the eyes black.

(b) If your answer is $n=2$ color the shapes under the eyes brown.

20. $-3x=4(3x-2)+1$

(a) If your answer is $x=\frac{7}{15}$ outline the mouth in red.

(b) If your answer is $x=\frac{8}{15}$ outline the mouth in black.

21. $2(x+1)=-3(x-2)$

(a) If your answer is $x=-\frac{8}{5}$ color the straps on the backpack green.

(b) If your answer is $x=\frac{4}{5}$ color the straps on the backpack black.

22. $3(2m-3)=5(m+1)$

(a) If your answer is $m=14$ color the backpack brown.

(b) If your answer is $m=10$ color the backpack green.

23. $-4(3m+5)=-2(m-2)$

(a) If your answer is $m=\frac{12}{5}$ color the shirt collar brown.

(b) If your answer is $m=-\frac{12}{5}$ color the shirt collar green.

24. $3(n+1)-2=4(2n+3)$

(a) If your answer is $n=-\frac{9}{5}$ color the shirt shades of yellow and brown.

(b) If your answer is $n=-\frac{11}{5}$ color the shirt shades of green and brown.

25. $2(x+5)-3=-(2x+1)+1$

(a) If your answer is $x=-\frac{5}{4}$ outline the scar in red.

(b) If your answer is $x=-\frac{7}{4}$ outline the scar in black.

26. $2(m+1)=3m$

(a) If your answer is $m=2$ color the stripes on the American flag red and white.

(b) If your answer is $m=-2$ color the stripes on the American flag pink and white.

27. $-(x+1)=2x$

(a) If your answer is $x=\frac{1}{3}$ color the background of the section with stars on the American flag purple.

(b) If your answer is $x=-\frac{1}{3}$ color the background of the section with stars on the American flag blue.

Artistic Tip: **When you are done coloring, it looks nice to outline the major features using a black crayon or marker.**

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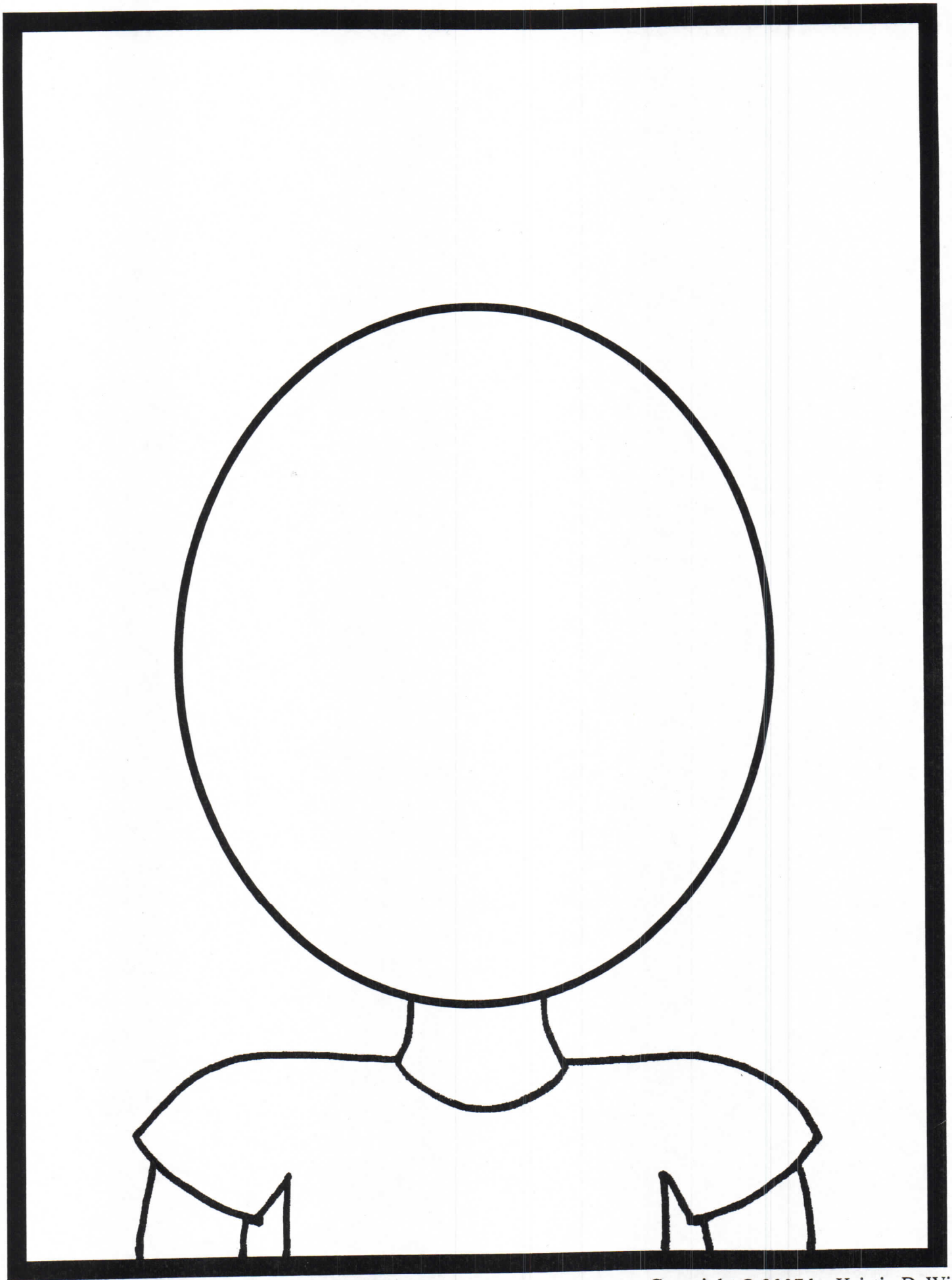

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