1. $2\left(\frac{1}{4}+\frac{2}{3}\right)=$

a) $\frac{22}{24}$

b) $\frac{11}{6}$

c) $\frac{6}{7}$

d) $\frac{6}{14}$

e) $\frac{4}{7}$

2. Express $\frac{1}{y^2}+\frac{2}{x^2y}+\frac{1}{x^2y^3}$ as a single fraction:

a) $\frac{x^2y+2y^2+1}{x^2y^3}$

b) $\frac{4}{x^4y^6}$

c) $\frac{x+2y}{x^2y^3}$

d) $\frac{x^2+3y}{x^2y^2}$

e) $\frac{x^4y^4+2xy^5+x^2}{x^4y^6}$

3. Simplify $\frac{\left(2xy^2\right)^3}{\left(x^2y\right)^2}$

a) $6xy^4$

b) $8x^7y^8$

c) $\frac{6y^3}{x}$

d) $\frac{8y^3}{x}$

e) $\frac{8y^4}{x}$

LIVEWORKSHEETS

4. $16^{-1/4} \times 4^0 =$

a) -2

b) $\frac{1}{2}$

c) 0

d) $-\frac{1}{2}$

e) 2

5. The largest common factor of $3x^3y + 2x^2y^2$ is

a) $6x^3y^2$

b) $6x^5y^3$

c) x^2y

d) x^3y^2

e) $2x^2y$

6. Factor x^2+2x-8

a) $(x+2)(x-4)$

b) $(x+8)(x-1)$

c) $(x-8)(x+1)$

d) $(x-2)(x+4)$

e) $(x-4)(x-2)$

7. If $x^2-4x+1=0$, then $x=$

a) $2+\sqrt{3}$, $2-\sqrt{3}$

b) $-2+\sqrt{3}$, $-2-\sqrt{3}$

c) $2+\sqrt{5}$, $2-\sqrt{5}$

d) $\sqrt{3}$, $-\sqrt{3}$

e) None of the above.

8. If $|2x-3|=9$, then $x=$

a) -6 or 3

b) -6 or -3

c) 6 or -3

d) 6 or 3

e) None of the above.

LIVEWORKSHEETS

9. If $|x-3|>5$, then

a) $-2<x<8$

b) $-8<x<2$

c) $x<-8 \cup x>2$

d) $x<-2 \cup x>8$

e) $x<-8 \cup x>-2$

10. If $2x^2-8 \leq 0$, then

a) $x<2$

b) $x \leq 2$

c) $x \leq -2$ *or* $x \geq 2$

d) $x \geq 2$

e) $-2 \leq x \leq 2$

11. Solve the following pair of equations for x and y : $2x-y=5$ and $4x+y=7$

a) $x=-2, y=1$

b) $x=2, y=-1$

c) $x=1, y=-3$

d) $x=-6, y=-17$

e) $x=2, y=1$

12. $\dfrac{\dfrac{1}{xy}-1}{\dfrac{1}{x^2}-\dfrac{y}{x}}=$

a) $\dfrac{y}{x}$

b) $\dfrac{x}{y}$

c) $\dfrac{1-xy}{x}$

d) xy

e) $xy-1$

LIVEWORKSHEETS

13. $\frac{1}{2x+18}-\frac{x}{x^2-81}=$

a) $\frac{-1}{2(x-9)}$

b) $\frac{-3(x+3)}{2(x+9)(x-9)}$

c) $\frac{-1}{2(x+9)}$

d) $\frac{-9}{(x+9)(x-9)}$

e) $\frac{1-x}{(x-9)(x+7)}$

14. If $x=11$ and $y=25$, then $(x+y)^{-1/2}=$

a) 6

b) -6

c) $\frac{\sqrt{11}}{55}$

d) $\frac{1}{6}$

e) $-\frac{1}{6}$

15. Factor $16x^4-1$

a) $(2x-1)^2(2x+1)^2$

b) $(4x-1)^2(4x+1)^2$

c) $(2x-1)(2x+1)(4x^2+1)$

d) $(2x-1)(2x+1)(2x^2-1)$

e) $(2x-1)(2x+1)(2x^2+1)$

LIVEWORKSHEETS

16. If $\frac{5}{x+2} = \frac{5-x}{x-2} + 1$, then $x =$

a) 2
b) -8
c) 8
d) -2
e) None of the above.

17. If $f(x) = x^2 - 1$ then $f(x-1) =$
a) $x^2 - 2$
b) $x^2 - 2x - 2$
c) $x^2 - x$
d) $x^2 - 2x$
e) x^2

18. Let $f(x) = x - 2x^2$ and $g(x) = 1 - 2x$. Evaluate $g(f(x)) =$
a) $1 - x - 2x^2$
b) 0
c) $6x - 1 - 8x^2$
d) $x - 2$
e) $1 - 2x + 4x^2$

19. The graph of the equation $y = 4 - x$ is
a) a parabola with vertex $(x, y) = (1,4)$
b) a parabola with vertex $(x, y) = (-1,4)$
c) a line with slope -1 and intercept 4
d) a line with slope 4 and intercept -1
e) a circle with radius 2

20. The graph of the equation $y = 4 - x^2$ is
a) a downward opening parabola with vertex $(x, y) = (0,4)$
b) a downward opening parabola with vertex $(x, y) = (4,0)$
c) a upward opening parabola with vertex $(x, y) = (0,4)$
d) an upward opening parabola with vertex $(x, y) = (4,0)$
e) a circle with radius 2

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21. Find the equation of the straight line through points $(x, y) = (-2,1)$ and $(x, y) = (1, -2)$.

a) $y = x - 1$
b) $y = x + 1$
c) $y = -2x + 1$
d) $y = 1 - x$
e) $y = -x - 1$

22. Find the equation of the line perpendicular to $x + 3y = 4$ through the point $(x, y) = (1,5)$.

a) $3x - y = -2$
b) $x + 3y = 16$
c) $3x + y = 8$
d) $x - 3y = -14$
e) $3x + y = 4$

23. Which graph best represents the equation $y = -x^2 - 4x + 1$?

a) (2,5)



b)



c) (-2,5)



d)



e) (2,-5)



24. The line $y = \frac{1}{2}x + 1$ intersects the parabola $y = x^2 - 4x + 3$ at

a) $x = 4$ and $x = \frac{1}{2}$
b) $x = 1$ and $x = \frac{1}{4}$
c) $x = -\frac{1}{2}$ and $x = 4$
d) $x = \frac{1}{2}$ and $x = \frac{1}{4}$
e) None of the above.

25. The parabolas $y = x^2 + 2x + 2$ and $y = -2x^2 + 8x - 7$ intersect at points$(x, y) =$

a) $(1,1)$ and $(3, -2)$
b) $(1,1)$ and $(3,17)$
c) $(-1,1)$ and $(3, -2)$
d) $(-1, -1)$ and $(3,17)$
e) none of the above

26. After a 20% price decrease, the cost of an item is \$4.20. What was the original price?

a) \$4.40
b) \$5.04
c) \$5.00
d) \$4.96
e) \$5.25

LIVEWORKSHEETS

27. Adam can shovel a driveway in two hours. Bev can shovel the same driveway in three hours. How long would it take them working together?

a) 2 hours 30 minutes
b) 2 hours 20 minutes
c) 48 minutes
d) 1 hour 12 minutes
e) 1 hour 36 minutes

28. A car leaves Regina at 1 PM and drives along Highway #1 at constant speed 85 km/h. A 2nd car leaves Regina at 1:30 PM and follows the same highway at constant speed 110 km/h. At what time will it pass the first car?

a) 1:47 PM
b) 2:07 PM
c) 2:42 PM
d) 3:12 PM
e) 3:30 PM

29. A cell phone plan costs $20 a month and includes 200 free minutes. Each additional minute costs 5 cents. Assume you use your cell phone for *at least* 200 minutes a month. If x is the total number of minutes a month, then your total cost C is given by

a) $C = 10 + .05x$
b) $C = 20x + .05$
c) $C = 20 + .05x$
d) $C = 20.05x$
e) $C = 30 + .05x$

30. Find the area of the triangle that has sides with length 3, 4, and 5.

a) 6
b) 7.5
c) 10
d) 12
e) 15

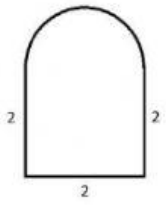
31. Find the distance between points $(x, y) = (-1,2)$ and $(x, y) = (3,4)$.

a) 5
b) $\sqrt{8}$
c) $\sqrt{10}$
d) $\sqrt{20}$
e) $\sqrt{40}$

LIVEWORKSHEETS

32. Find the total area of the given shape, a square with side length 2 topped by a semi-circle.

a) $6+\pi$
b) $2+\pi$
c) $4+4\pi$
d) $4+\frac{\pi}{2}$
e) $4+\pi$



33. $log_3 81 =$

a) 3
b) 9
c) 27
d) 4
e) none of the above

34. If $\log_a 64 = 2$, then $a =$

a) -8
b) 32
c) 128
d) 4096
e) 8

35. Simplify $\log\left(xy^2\right) =$

a) $2\log(xy)$
b) $\log(x)\log(y^2)$
c) 2^{xy}
d) $\log(x)+2\log(y)$
e) none of the above

36. If $4^{x+1}=8$, then $x =$

a) 1
b) $\frac{1}{2}$
c) 2
d) -2
e) $\frac{-1}{2}$

LIVEWORKSHEETS