

Also like Power-Up Test 17

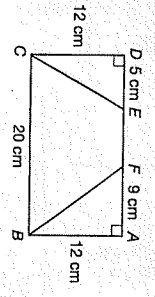
1. A deck of 26 alphabet cards contains one card for every letter including the vowels A, E, I, O, and U. One card is drawn and not replaced and then a second card is drawn. What is the probability that both cards are vowels?

2. Alex figured she saved \$12 buying the item at a 30% discount. How much did she pay for the item?

3. Which of the following is not a characteristic of a graph displaying direct variation?
 A. The graph is a line or aligned points.
 B. The graph aligns with the origin.
 C. The slope of the graph is positive.
 D. The graph lies in the 2nd and 4th quadrants.

4. If an image on a computer screen is increased 50%, then its area increases by what percent?

Figure ABCD is a rectangle. Refer to this figure to answer questions 5 and 6.



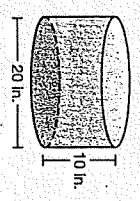
5. What are the lengths of CE, EF, and FB?

6. What is the area of trapezoid BCEF?

7. A formula for this sequence is $a_n = n^2 - 2$. What is the twelfth term of the sequence?
 -1, 2, 7, 14, ...

8. How much money is $66\frac{2}{3}\%$ of \$36,000?

For questions 9 and 10, refer to the cylinder.



9. What is the volume of the cylinder?

10. What is the lateral surface area of the cylinder?

11. Sketch the graph of the equation $2x + 3y = 6$.

12. Solve this equation for x:
 $ax + b = c$

13. Solve and graph on a number line:
 $3 - x < 4$

14. Convert 30 gallons per hour to quarts per minute using two unit multipliers. Show your work.

For questions 15 an solve for x.

15. $x - 0.5x = 1.2$

16. $\frac{2}{3}x - \frac{1}{3} = \frac{2}{3}$

For questions 17-20, simplify the expression.

17. $4x^2 \cdot x$

18. $6x^4 \cdot x^2$

18. $3x^2 + 2x - x^2 - x$

19. $(-2) - (-2)^2$

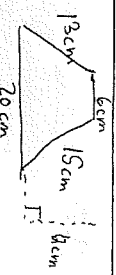
20. $2\sqrt{3} \cdot \sqrt{6}$

Prob of vowel = $\frac{5}{26}$
 on 1st draw = $\frac{5}{26}$
 Prob. of vowel = $\frac{4}{25}$
 on 2nd draw = $\frac{4}{25}$

$\frac{5}{26} \cdot \frac{4}{25} = \frac{20}{650} = \frac{2}{65}$

Discount	100	12
New \$	30	?
	70	

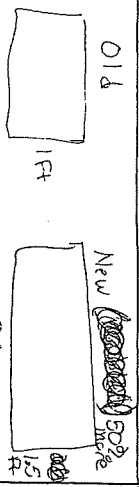
$\frac{30}{70} = \frac{12}{x}$
 $70 \cdot 12 = 840$
 $840 \div 30 = 28$



$A = \frac{1}{2} \cdot (b_1 + b_2) \cdot h$
 $A = \frac{1}{2} \cdot (13 + 15) \cdot 6$
 $A = \frac{1}{2} \cdot (28) \cdot 6 = 84$

7. $a_n = n^2 - 2$ 12th term?
 $a_{12} = 12^2 - 2 = 144 - 2 = 142$

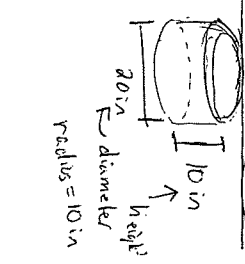
8. $66\frac{2}{3}\%$ of \$36 ??
 $66\frac{2}{3}\% = \frac{2}{3}$
 $\frac{2}{3} \cdot 36 = 24$



Old Area = 1 ft²
 New Area = 3.375 ft²
 Increases 2.375, or 237.5%

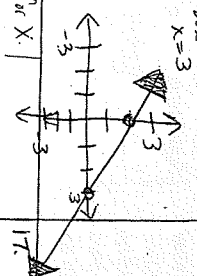
CE = $\frac{a^2 + b^2}{c^2}$
 $\frac{5^2 + 12^2}{13^2} = \frac{25 + 144}{169} = \frac{169}{169} = 1$
 EF = $\frac{a^2 + b^2}{c^2}$
 $\frac{5^2 + 14^2}{17^2} = \frac{25 + 196}{289} = \frac{221}{289} = \frac{13}{17}$

9. $V = \pi \cdot r^2 \cdot h$
 $V = \pi \cdot 10^2 \cdot 10 = 3140 \text{ in}^3$



10. Lateral SA = Circumference * Height
 $SA = \pi \cdot d \cdot h = \pi \cdot 20 \cdot 10 = 628 \text{ in}^2$

11. $2x + 3y = 6$
 $2x + 3y = 6$
 $0 + 3y = 6$
 $y = 2$



12. $ax + y = c$
 $ax + y = c$
 $-y = c - b$
 $y = \frac{c - b}{a}$

13. $B - X < 4$
 $-X < 4 - B$
 $X > -1$

14. $\frac{30 \text{ quarts}}{1 \text{ hr}} \cdot \left(\frac{4 \text{ quarts}}{1 \text{ gallon}}\right) \cdot \left(\frac{1 \text{ hr}}{60 \text{ min}}\right) = 2 \text{ quarts per minute}$

15. $2\sqrt{3} \cdot \sqrt{6} = 2\sqrt{18} = 2 \cdot 3\sqrt{2} = 6\sqrt{2}$

16. $\frac{2}{3}x - \frac{1}{3} = \frac{2}{3}$
 $\frac{2}{3}x = \frac{2}{3} + \frac{1}{3} = 1$
 $x = \frac{3}{2}$

17. $\frac{4x^2 - 9y^2}{6x^2y^2} = \frac{4x^2}{6x^2y^2} - \frac{9y^2}{6x^2y^2} = \frac{2}{3y^2} - \frac{3}{2xy^2}$

18. $3x^2 + 2x - 1 = (x-1)(3x+1)$

19. $(-2) - (-2)^2 = -2 - 4 = -6$

20. $2\sqrt{3} \cdot \sqrt{6} = 6\sqrt{2} = 18$